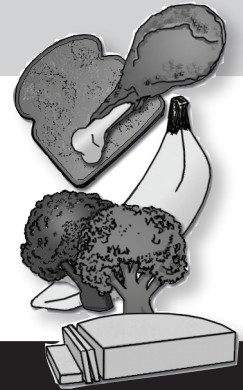




# LESSON 1

# What's in Food?

Student Learning Objectives:	National Health Standards:
1. Identify general nutrients the body needs.	• Core Concepts
2. Identify calcium and vitamin D intake and physical activity as protectors from developing osteoporosis.	• Core Concepts
3. Choose a snack using specific criteria, such as fat, carbohydrate, fiber, calcium and calorie content.	• Self Management



## Lesson Synopsis

Introduce the nutrition unit. Identify the six nutrients the body needs daily and common food sources for each nutrient. Discuss the role of calcium and vitamin D in bone health and the prevention of osteoporosis. Identify snacks that are good sources of nutrients and one snack that provides calcium and vitamin D.

Activity	Time in Minutes	Materials Needed
Introduction	3	Health Education Materials <ul style="list-style-type: none"> <li>• Poster Set: "MyPlate: Healthy Food Choices," Educational Materials Center</li> </ul>
Teacher Input	22	Health Education Materials <ul style="list-style-type: none"> <li>• Poster: "Nutrients: Vitamins, Minerals, Proteins," Educational Materials Center</li> <li>• Poster: "Nutrients: Carbohydrates, Fats," Educational Materials Center</li> <li>• Activity Cards: "Food Labels," Educational Materials Center, eight sets</li> <li>• Poster: "Using Food Labels to Guide Decisions," Educational Materials Center</li> <li>• Food Label Signs: "Note the Amount" and "Percent of Daily Value," Educational Materials Center</li> <li>• Poster Set: "MyPlate: Healthy Food Choices," Educational Materials Center</li> </ul> Teacher Manual Resources <ul style="list-style-type: none"> <li>• Slide Master: "Nutrients: Vitamins, Minerals, Proteins" (Optional)</li> <li>• Slide Master: "Nutrients: Carbohydrates, Fats" (Optional)</li> <li>• Student Worksheet: "Nutrients"</li> <li>• Teacher Key: "Nutrients"</li> </ul> Supplied by the Teacher <ul style="list-style-type: none"> <li>• Pencils or pens</li> <li>• Food labels and packages including many snack foods</li> <li>• Slides (Optional)</li> <li>• Projector (Optional)</li> <li>• Self-adhesive notes, at least 4" x 6" (Suggestion)</li> <li>• Non-permanent, dry erase marker (Suggestion)</li> <li>• Computer with Internet access (Extension Activity)</li> </ul>
Application or Skill Practice	15	Teacher Manual Resources <ul style="list-style-type: none"> <li>• Student Worksheet: "Snacking for Health"</li> </ul> Supplied by the Teacher <ul style="list-style-type: none"> <li>• Pencils or pens</li> <li>• Food labels and packages including many snack foods</li> </ul>

<b>Closure</b>	5	Teacher Manual Resources <ul style="list-style-type: none"> <li>• Family Resource Sheet: “Healthy Snacking”</li> </ul> Supplied by the Teacher <ul style="list-style-type: none"> <li>• Folders, one per student (Suggestion)</li> </ul>
<b>TOTAL</b>	<b>45</b>	

## Preparation

Prior to the Lesson:

- Several days before the start of this nutrition unit, **ask students to bring to school at least three food labels** or packages to use with the lessons in this unit. Encourage students to bring labels from **favorite snack foods** or beverages. Collect food labels for students who do not bring any.
- **Decide if you will invite** a member of your food service staff to come into the classroom to talk about the nutrients in foods served in the lunchroom.

For Introduction:

- **Display the poster**, “Fill Your Plate,” from the poster set, “MyPlate: Healthy Food Choices.” Create a space so the poster can be displayed throughout the next few health lessons.
- **Have** the “Food Group Signs” from the poster set, “MyPlate: Healthy Food Choices,” **ready to post** near the poster.

For Teacher Input:

- **Display the poster**, “Nutrients: Vitamins, Minerals, Proteins” and “Nutrients: Carbohydrates, Fats.” If wall space is limited, **prepare the optional slides** to use instead of the posters.
- **Display the poster**, “Using Food Labels to Guide Decisions.” Have the food label signs, “Note the Amount,” and “Percent of Daily Value,” ready to display around the poster. Create a space so they can be displayed throughout the next few health lessons.
- **Display** the rectangular physical activity sign from the poster set, “MyPlate: Healthy Food Choices.”
- **Decide how to form six to eight small groups.**
- **Duplicate** the student worksheet, “Nutrients,” for each student.

For Application or Skill Practice:

- **Decide how to form small groups** with three or four students in each group. You may want to use the previously formed groups.
- **Duplicate** the student worksheet, “Snacking for Health,” for each student.

For Closure:

- **Duplicate** the family resource sheet, “Healthy Snacking,” for each student to take home.





**Time-Saver Tip:** In the Application or Skill Practice portion of the lesson, students are asked to record three snacks. Two of the snacks must contain two or three nutrients. The third snack must contain calcium and vitamin D. Then, share their ideas in small groups of three or four. To save time, use the groups formed in the Teacher Input section of the lesson. Assign each small group member a different assignment. Two of them would find snacks with two or three nutrients and one or two group members would find a snack with calcium and vitamin D. Then, they can share ideas and complete their worksheets together.

# LESSON PROCEDURE








**Introduction:** Review the food groups and introduce nutrients as the topic for this lesson.





Approximately 3 minutes

Instructional Steps	Script & Detailed Directions	Extensions & Suggestions
Introduce the unit.	<p><b><i>Think of your favorite snack. A snack is a small meal you eat between breakfast, lunch, and dinner.</i></b></p> <p><i>We are beginning a unit that will help us know how to choose snacks that will keep us healthy and full of energy. We will learn about the special substances foods contain and how to tell if a food is a healthy choice. We'll also have a chance to put our knowledge to work by planning nutritious snacks and meals.</i></p>	
<p>Review the names of the food groups.</p> <p>Display the poster, "Fill Your Plate," and add the "Food Group Signs" from the poster set, "MyPlate: Healthy Food Choices."</p>	<p><b><i>Who remembers the name of one of the food groups?</i></b></p> <p>Call on students until all the food groups are named. Fill in the plate with the "Food Group Signs" as the groups are named. The following are the titles used by the United States Department of Agriculture.</p> <p>Answers:</p> <ul style="list-style-type: none"> <li>• fruits</li> <li>• vegetables</li> <li>• grains</li> <li>• dairy</li> <li>• protein foods</li> </ul> <p>Post the rectangular "Food Group Signs" around the poster.</p> <p><i>Notice that the size of each section on the plate gives us a clue about how much we should eat from each food group. We'll talk more about that later.</i></p> <p><b><i>Why do you think our government has identified these food groups and has stated that the healthiest choice is to eat a variety of foods from all of the food groups?</i></b></p> <p>Answer: If we eat a variety of foods from all the food groups, we will get the nourishment our bodies need to be healthy.</p> <p><b><i>Think about whether or not your favorite snack belongs in one of the food groups.</i></b></p>	<div style="text-align: center;">  <p>The food groups were taught or reviewed in the <i>Michigan Model</i>® at grades 1, 2, 3, and 4.</p> </div> <div style="text-align: center;">  <p>Encourage your food service partners to display posters in the cafeteria that describe the food groups. Check the United States Department of Agriculture website for resources.</p> </div> <div style="text-align: center; border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <a href="http://www.ChooseMyPlate.gov">www.ChooseMyPlate.gov</a> </div>
Introduce the topic for this lesson.	<p><i>Today we will learn about the substances contained in different foods that we need to grow and stay healthy. They are called nutrients.</i></p>	

**Teacher Input:** Introduce the six nutrients and identify food sources of different nutrients by examining food models.

Approximately 22 minutes

Instructional Steps	Script & Detailed Directions	Extensions & Suggestions
<p>Identify the six nutrients.</p> <p>Display the two posters, “Nutrients: Vitamins, Minerals, Proteins” and “Nutrients: Carbohydrates, Fats,” or use the slides.</p>  <p>Divide the class into six to eight groups and distribute a set of food labels to each group, and a student worksheet, “Nutrients,” to each student.</p>  <p>Explain where to find the nutrients listed using the poster, “Using Food Labels to Guide Decisions.”</p> <p>Identify specific types of nutrients within each of the five nutrient categories. Use the teacher key, “Nutrients,” for ideas.</p> 	<p><i>There are six nutrients every person’s body needs: vitamins, minerals, proteins, carbohydrates, fats, and water.</i></p> <p>Point out the five nutrients on the posters or slides and indicate that they will learn about the sixth nutrient in another lesson.</p> <p><i>If you eat a variety of foods from each food group, you will be more likely to get the nutrients your body needs.</i></p> <p><i>Let’s see which nutrients are found in commonly eaten foods.</i></p> <p>Divide the class into small groups. Assign a student in each group to be the leader and a second student to be the spokesperson.</p> <p>Give each group a set of the food labels and enough student worksheets so that each group member will have one. Explain the task.</p> <p><i>You will complete this task as a team. Your leader will divide the food labels among your group members so that each of you has a similar number of labels.</i></p> <p><i>Look at the food labels for the nutrients contained in the food. I’ll show you where to look on this poster.</i></p> <p>Point out the nutrients on the poster.</p> <p><b><i>In your group, find two food sources for each of the five nutrients. We will explore the last nutrient, water, later. Write the sources on your worksheet.</i></b></p> <p>After five minutes, have each group’s spokesperson report the findings for vitamins and minerals. Encourage students to add ideas to their worksheets if they wish.</p> <p><i>You can see from the information on your food labels that some nutrients, such as vitamins and minerals, have specific names.</i></p> <p><b><i>See if your group can name three specific vitamins and three specific minerals.</i></b></p> <p>Gather ideas from each group’s spokesperson. Have students record the specific vitamins and minerals on their worksheets.</p> <p><i>We can also break proteins, carbohydrates and fats into smaller groups.</i></p>	 <p>If students are familiar with nutrients, have them list the nutrients they remember.</p>  <p>Invite a member of your food service staff to come into the classroom to talk about the foods served in the lunchroom and their nutrients. Have the students work with the food service staff to create labels to be displayed in the lunchroom indicating the various nutrients found in foods served.</p>  <p>If students have brought food labels or packages, be sure to include them with the pre-prepared labels.</p>  <p>You may want to use self-adhesive notes to record the students’ ideas on the posters. If your posters are laminated, you can use a non-permanent, dry erase marker and record directly on the posters or on the slides.</p>

	<p><b>Protein is either a plant or an animal protein. Who can tell me a source of protein that is from a plant?</b></p> <p>Answers: dry beans and nuts</p> <p><b>Who can tell me a source of protein that is from an animal?</b></p> <p>Answers: meats and poultry</p> <p><i>Animal protein tends to be higher in fat, so eating low-fat, or lean, protein foods is best.</i></p> <p><i>Note if the sources of protein on your worksheet are from an animal or a plant.</i></p> <p><i>Sugar, starch, and fiber are all carbohydrates.</i></p> <p><b>What are some sources of carbohydrates?</b></p> <p>Answers: breads, rice, pasta, bagels, cereal, etc.</p> <p><i>There is also more than one kind of fat. There are saturated and unsaturated fats. Recently, we have heard more about another type of fat, trans fat. It is best to eat fewer saturated and trans fats.</i></p> <p><b>What are some sources of fat?</b></p> <p>Answers: butter, meats, ice cream, etc.</p> <p><i>As you can see, the six nutrients become many different kinds of specific nutrients. The body needs different specific nutrients to stay healthy. That is why eating a variety of foods from each food group is important.</i></p>	 <p>Have students design puzzles, riddles, and cross-word puzzles highlighting various nutrients to put on school menus.</p>  <p>Gather lots of packages from snacks students typically eat or have students help collect them. Use the packages to have a scavenger hunt for healthy snacks. Set criteria for a healthy snack and have students search for snacks that meet the criteria. Create a bulletin board of snacks that meet the criteria and those that do not.</p>
<p>Find the serving size and percentage of nutrients on the food labels. Post the food label signs, "Note the Amount," and "Percent of Daily Value."</p>	<p><i>Look at a food label and find the serving size.</i></p> <p>Point out the location on the poster and post the food label sign, "Note the Amount."</p> <p><i>The serving size is how much of the food is typically eaten at one time. Packages of food often have more than one serving. Next, find the percentage of each nutrient contained in one serving. It will be in the column on the right. We'll use this information later.</i></p> <p>Point out the location on the poster and post the food label sign, "Percent of Daily Value."</p>	 <p>The serving size listed on food labels vary. Manufacturers can define their own serving size.</p>
<p>Identify calcium and vitamin D as essential nutrients for bone health and the prevention of osteoporosis later in life.</p>	<p><i>Now we're going to focus on one mineral and one vitamin that work together to make healthy bones.</i></p> <p><b>Raise your hand if you have heard of the condition called osteoporosis.</b></p>	 <p>The key concept is that prevention of osteoporosis begins in childhood and adolescence.</p>

Write the word “osteoporosis” on the board.

**What do you know about this condition?**

Augment the students’ responses with the following explanation.

*Osteoporosis is a disease in which bones become fragile and are more likely to break.*

*Osteoporosis usually begins to show up in people over fifty years old. People who have this condition may not have understood that the time to build strong bones is when you are young. You build strong bones, or bone density, until you are 20-30 years old. Then, you can work to maintain your bone strength, but you do not add to your bone density. So, it’s important to learn how to build strong bones now.*

*Building strong bones requires the mineral calcium and the vitamin D.*

*Calcium needs vitamin D to be converted into bone tissue and build bone density. Getting enough of these two nutrients when bones are being formed and are growing is very important.*

Write the formula below on the board:

Calcium + Vitamin D \_\_\_\_\_ = Strong Bones

Leave a space between “Vitamin D” and the “=” sign. You will fill it in later.

*Look through your food labels again and quickly name some good sources of calcium and vitamin D. See if you can find foods that contain both calcium and vitamin D.*

Ask students to tell the class the foods they identify. Record them under the formula.

*The body also makes vitamin D when it is exposed to the sun. How much vitamin D a person gets from the sun depends on where he or she is, how much time is spent outside, and the person’s use of sunscreen.*

*You need one more thing to prevent osteoporosis: physical activity. Physical activities where you are carrying your full weight are the best for building strong bones. These are called weight-bearing activities. Jumping rope, running, climbing stairs, and playing soccer and basketball are all examples of this type of physical activity.*

Write “physical activity” in the space left in the formula.



Encourage students to learn more about the importance of calcium by playing the interactive educational games on the National Institutes of Health website called Milk Matters.

[www.nichd.nih.gov/milk/kidsteens.cfm](http://www.nichd.nih.gov/milk/kidsteens.cfm)



Have your physical education teacher consider using the Exemplary Physical Education Program. It provides grades-level specific activities for physical education.

Identify foods that are good sources of calcium and vitamin D. Emphasize foods that contain both of these nutrients.

Explain the relationship between vitamin D and sun exposure.

Identify physical activity as an essential part of building strong bones. Post the rectangular physical activity sign from the poster set, “MyPlate: Healthy Food Choices.”



Visit the Educational Materials Center website to get ideas for adding movement in the classroom. Go to Brain Breaks.

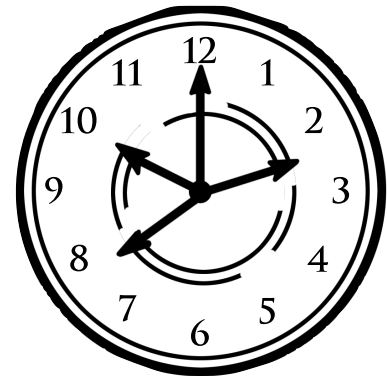
[www.emc.cmich.edu](http://www.emc.cmich.edu)



# Snacking for Health

**Directions:** List snacks you might eat during one day.

- Include two snacks that contain two or three nutrients.
- Include one snack that contains calcium and vitamin D.



**Morning Snack:** \_\_\_\_\_

Serving Size: \_\_\_\_\_

Nutrients Contained in This Snack	Percentage in Each Serving

**Afternoon Snack:** \_\_\_\_\_

Serving Size: \_\_\_\_\_

Nutrients Contained in This Snack	Percentage in Each Serving

**Evening Snack:** \_\_\_\_\_

Serving Size: \_\_\_\_\_

Nutrients Contained in This Snack	Percentage in Each Serving

## Did you know...

- Many of our nation's children are overweight.
- The food and physical activity choices children make today will affect their health today, tomorrow and in the future.
- Snacks account for about 20% of the nutrients and calories a typical child consumes.
- Children can learn to eat healthy snacks that are low in fat and added sugar.

that contain nutrients. Fifth grade children are growing rapidly. They need nutrients to build new cells for growth, and they need extra energy for all their daily activities. Carefully chosen snacks can provide the energy and nutrients children need and are often lacking.

# 6

### Six Essential Nutrients

- Vitamins
- Minerals
- Carbohydrates
- Fat
- Protein
- Water

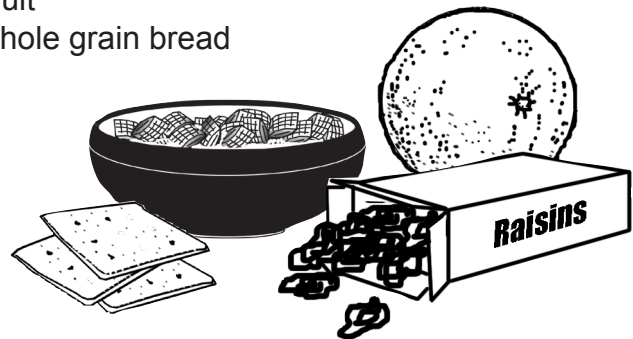
We have been learning about food and what to eat to stay healthy. Your child knows about the six essential nutrients. He or she also knows how important it is to choose snacks

## SNACKS

### Helping Your Child Select Healthy Snacks

Ask your child to make a snack list for your next trip to the grocery store. Remind your child of what he or she has learned about the importance of choosing nutritious snacks. There are many possible choices!

- Low-fat microwave popcorn
- Peanut butter sandwich on whole grain bread
- Low-fat cottage cheese with fruit
- Fresh fruit with low-fat yogurt for dipping
- Snack-size, low-fat pudding
- Fresh vegetables, like baby carrots, with low-fat salad dressing dip
- Unsweetened whole grain cereal with sliced fruit
- Lean meat and low-fat cheese sandwich on whole grain bread
- Baked chips with salsa
- Applesauce in a single serving container
- Animal crackers or graham crackers
- Whole fruit
- Box of raisins
- Trail mix with dried fruit
- Pretzels or rice cakes
- Whole grain crackers
- Fig bars



**Want more information and ideas?**  
Visit [www.emc.cmich.edu/healthyweight](http://www.emc.cmich.edu/healthyweight)

## YOUR CHILD HAS A

# BONE BANK ACCOUNT!

The human body is always making withdrawals and deposits in its “bone bank account.” During childhood and the teenage years, more deposits are made into the bone account than withdrawals are taken out. The bone bank account gets larger and larger. Around age 20, the bone bank account is as large as it will ever get. After that, the body withdraws more from the bone account than it puts in. If the bone bank account isn’t large enough, the bones can become weak later in life. This is called osteoporosis. People with osteoporosis have fragile bones that break easily.

Now is the time for your child to make as many deposits into his or her bone bank account as possible!

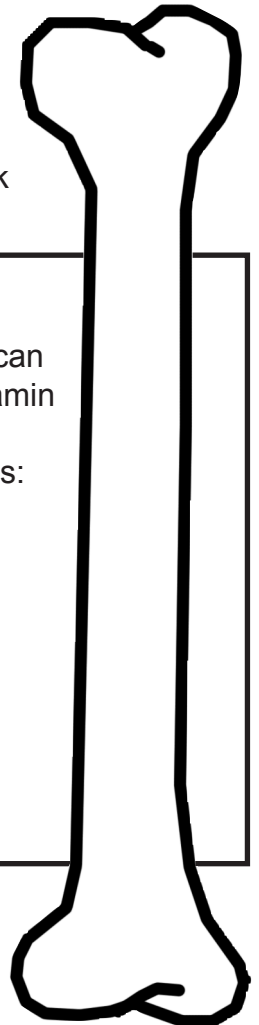
### HELP YOUR CHILD BUILD STRONG BONES

There are four easy things you and your child can do to build strong bones.

1. Get plenty of calcium.
2. Get plenty of vitamin D.
3. Get plenty of physical activity, especially weight-bearing activities, such as jumping rope, jogging, skating, playing soccer or tennis or basketball, stair-climbing, and walking.
4. Use good posture.

We have learned that snacks can help meet the calcium and vitamin D needs for building strong bones. Here are a few favorites:

- Low-fat or fat-free milk
- Low-fat yogurt, frozen yogurt, or ice milk
- Low-fat cheese on a bagel
- Broccoli
- Calcium- and vitamin D-fortified fruit juices
- Cereal fortified with calcium



## Busy Lives and **Smart** Food Choices

It’s important to make smart food choices and watch portion sizes when you are at the grocery store, at work, in your favorite restaurant, or running errands.

Try these tips:

- At the store, plan ahead. Buy a variety of nutrient-rich foods for meals and snacks throughout the week.
- When grabbing lunch, have a sandwich on whole-grain bread. Choose low-fat or fat-free milk, water, or other drinks without added sugars.
- In a restaurant, choose steamed, grilled, or broiled dishes instead of fried or sautéed.
- If a restaurant serves large portions, share a meal or take some of it home.
- On a long commute or shopping trip, pack some fresh fruit, cut-up vegetables, string cheese sticks, or a handful of unsalted nuts. It will help you avoid impulsive, less healthful snack choices.
- Cut up fruit and vegetables and put them in the refrigerator. They’ll be easier to grab for a quick snack.

