

# Building Healthy Bones

*How much calcium is in your bones?*

Lesson Activity (Grades K-5)



## LESSON OVERVIEW:

The educator will introduce the lesson utilizing the “Build My Bones” handout and asking the question: Are you in first place with your food? Referencing the “Build My Bones” handout, the educator will explain the importance of building strong bones by eating calcium-rich foods.

The educator will lead an interactive discussion on the importance of drinking milk followed by a game of “last player standing.” After learning about calcium-rich foods and the importance of enjoying dairy every day, the students will break into five small groups with each group completing the “calcium in our bones” measurement activity for a selected stage of life.

Optional activities available at [www.southeastdairy.org](http://www.southeastdairy.org) include:

- “Fuel Up With Milk - It Does a Body Good”
- “Build My Bones”
- “Milk Helps You Grow”
- “Milk Maze Puzzle Handout”
- Where’s the DAIRY handout
- Eat Your Dairy Color Page

## LESSON OBJECTIVES:

**The student will:**

1. Understand the amount of calcium in bones by making visual observations.
2. Identify three calcium-rich foods.
3. Keep track of dairy foods consumed for one week and present the results as a drawing, chart or graph.

## LEADER BACKGROUND:

Milk provides a package of nine different nutrients, including calcium, vitamin D, potassium and protein. Choosing 3 servings of low-fat and fat-free dairy foods every day helps build strong bones and teeth and helps maintain a healthy heart. Low-fat or fat-free white and fat-free flavored milk is ideal to replace fluids and fuel up after strenuous exercise.

## ACADEMIC INTEGRATION:

- Health
- Critical Thinking
- Math
- Language Arts

The MyPlate food guide provides a graphic presentation of a healthful, balanced diet. It was designed as an easy tool to remind Americans to eat all five food groups in the proper portions. The 2015 Dietary Guidelines for Americans policy report highlights the nutrients of concern which are potassium, dietary fiber, calcium, and vitamin D.

### The following food groups are the best sources of these nutrients:

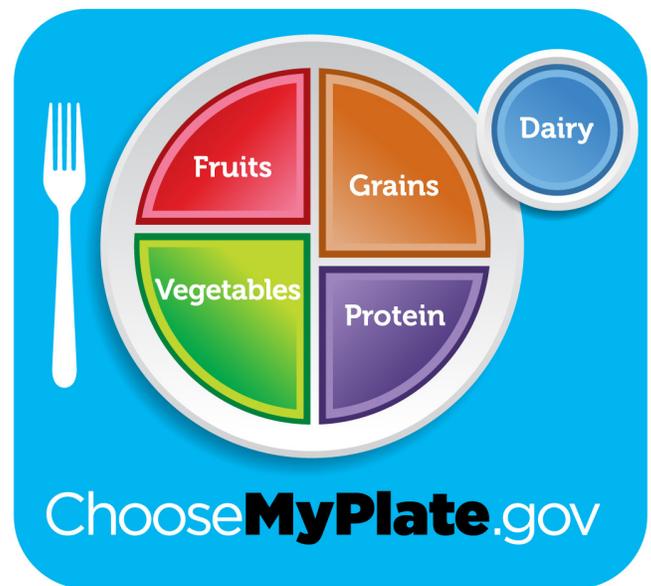
Potassium: Dairy, Fruits, Vegetables

Dietary Fiber: Fruits, Vegetables, Whole Grains

Calcium: Dairy

Vitamin D: Dairy

It is notable that dairy foods, including milk, yogurt and cheese are a significant source of three of the four nutrients of concern. Children ages 4-8 need 2.5 cups and teens ages 9-18 need 3 servings dairy. A serving is 8 ounces of yogurt or milk (white or flavored) and 1.5 ounces of cheese.



## VOCABULARY:

### Nutrient

Substances found in food that our bodies need to live, grow and stay healthy. The six classes of nutrients are carbohydrates, proteins, fats, vitamins, minerals, and water. There are more than 40 different nutrients with many different functions that are required for good health.

### Nutrient-Rich

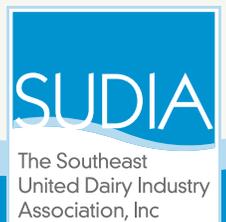
A nutrient-rich food refers to a food that contains substantial amounts of vitamins, minerals, protein and fiber in relatively few calories. The five MyPlate food groups are considered nutrient-rich.

## Materials Needed to Teach Lesson

1. 10 pound bag of flour
2. Measuring cups
3. Clear, plastic resealable storage bags
4. Index cards
5. Permanent marker
6. MyPlate graphic
7. "Fuel Up With Milk" Handout
8. "Build My Bones" Handout

## Before teaching the lesson, make sure to review the following resources:

- [chosemyplate.gov](http://chosemyplate.gov)
- [www.southeastdairy.org](http://www.southeastdairy.org)
- [FuelUpToPlay60.com](http://FuelUpToPlay60.com)



## TEACHING THE LESSON:

1. Start the lesson by playing a game of “last player standing.” Ask the entire class to stand up.

### Instruct students as follows:

- Who had milk with dinner last night?  
*If not, sit down.*
- Who had milk with breakfast this morning?  
*If not, sit down.*
- Who ate yogurt with breakfast today?  
*If not, sit down.*

If any players are left standing ask:

- *Who had 3 servings of dairy yesterday?*

Congratulate any players that are left standing. Explain to the class that these students are building healthy bones with their calcium-rich diets.

2. Divide students in 5 groups. Assign each group one of the 5 stages of life for “Calcium in Your Bones” demonstration. Explain process for demonstration. Students will measure flour as representation of calcium in your bones at each stage of life and share their findings.

3. Discuss the “Fuel Up With Milk - It Does a Body Good” handout. Ask students to complete optional handouts as appropriate.

**FUEL UP WITH MILK**  
*it does a body good!*

Milk provides 9 essential nutrients, making it one of the healthiest beverages you can choose. Drinking a cup of milk – any flavor – helps fuel your body and get you on your way to the recommended 3 servings every day of low-fat or fat-free milk, cheese or yogurt!

- CALCIUM:** Builds strong bones and teeth and helps the nerve, muscle and blood system work
- POTASSIUM:** Helps control your body's fluid balance and keeps the heart and muscles healthy
- PHOSPHORUS:** Creates cell energy and strengthen your bones
- PROTEIN:** Builds and repairs muscles to help you keep moving
- VITAMIN A:** Keeps your eyes and skin healthy and aids in fighting germs
- VITAMIN D:** Helps your body absorb calcium and improve bone strength
- VITAMIN B12:** Builds red blood cells that carry oxygen and help your muscles work
- RIBOFLAVIN:** Also known as vitamin B2, helps turn your food into energy
- NIACIN:** Helps your body digest food

Brought to you by the dairy farm families of the Southeast.

SUDIA The Southeast Dairy Association  
3 Every Day

## 4. Assign follow-up activity:

Students will keep track of dairy foods consumed for one week and present the results as a drawing chart or graph as grade-level appropriate.