

FUEL UP TO BUILD BONES

LESSON 4 FOUR

- Analyze Nutrition Facts labels to choose a beverage that is high in calcium.
- Explain how to build strong bones.
- Demonstrate proper form for three bone builder fitness activities.



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Lesson Title	Lesson 4: Fuel Up to Build Bones	
Lesson Overview	Students will understand how to build strong bones through food, beverage and activity choices. Students will identify drinks that are high in calcium and participate in bone building exercises.	
Estimated Time	35-45 minutes	
Grade Level Learning Standards	<p>3rd Grade:</p> <ul style="list-style-type: none"> • Explain importance of choosing healthy beverages. H1.N2.3 • Participate in developmentally appropriate activities to improve overall fitness. PE3.6.3 <p>4th Grade:</p> <ul style="list-style-type: none"> • Describe connections between body systems. PE3.7.4 • Demonstrate working cooperatively with others. PE4.4.3a • Participate in developmentally appropriate activities to improve overall fitness. PE3.6.4 <p>5th Grade:</p> <ul style="list-style-type: none"> • Analyze nutritional content of food using nutrition facts. PE3.8.5c • Compare beverages to make a healthy choice. H5N2.5 • Participate in developmentally appropriate activities to improve overall fitness. PE3.6.5 	
Learning Outcomes	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Analyze Nutrition Facts labels to choose a beverage that is high in calcium. • Explain how to build strong bones. • Demonstrate proper form for three bone builder fitness activities. 	
Lesson Preparation		Equipment/Resources
Make copies of the BONE Bingo handout for all students.		<ul style="list-style-type: none"> - Beverage Cards (available at eatsmart.org) - Bone Builder Fitness Cards (from Lesson 1) - BONE Bingo Handout (included) - 2 hula hoops (different colors) - Optional: Bones Poster (available at eatsmart.org)

Lesson Introduction

Estimated Time: 10-15 minutes

Step 1: Instant Activity & Fitness Development

Have students line up on one side of the gym. Instruct students to jog the length of the gym once, then skip down and traveling glute-kickers back once before gathering for fitness development instruction.

Select two bone builder activities from the Bone Builder Fitness Cards (recommended activities: High Knees and Lunges). Demonstrate activities using the critical elements and cues from the Bone Builder Fitness Card instructions. Demonstrate modifications as necessary. After each demonstration, have students do ten of the activities and provide feedback on their form.

Step 2: Building Strong Bones

Ask students, “Why do we want strong bones?” Elicit responses.

Explain that muscles are connected to bones—to be able to do all kinds of activities we need both strong muscles and strong bones. Together strong bones and muscles help us to remain upright (hold up our body) and able to move. The stronger our bones are, the less likely they are to break. Bones can be made stronger by making choices that help bones to grow.

There are two main things we can do that can help our bones grow. Ask, “Do you know what those two choices are?”

1. What we eat/drink: Choosing foods that have bone building nutrients (like calcium and vitamin D).
2. How active we are: Choosing to do weight-bearing exercises.

Ask students, “How can we be sure that we are getting enough bone building nutrients so that we are helping to build strong bones?” (Possible answers: Read Nutrition Facts labels, learn what foods are high in calcium and vitamin D, try to get 100% of the daily value of bone building nutrients from the foods and drinks that we consume each day).

Lesson Content & Activities

Estimated Time: 15 minutes

Step 1: Analyzing Beverages Directions

Set out two different colored hula hoops. Instruct students to select one beverage card and walk around the gym looking at the nutrition information to determine which hula hoop to put the card in. In one hula-hoop, students will place beverages that are “good for bones” or beverages which they believe will help grow bones drinking them. In the other hula hoop, students will place beverages that have “no impact on bones” or “aren’t good for strengthening bones.” Instruct students to sit after they have placed their beverage in the hula hoop.

Step 2: Analyzing Beverages

Look through the different piles of cards with students. Hold up examples of drinks that are high in calcium. Explain to students that just because a drink doesn’t have calcium in it, doesn’t mean it is unhealthy (like water), it just means that it doesn’t have a mineral that is going to help us build strong bones. Choosing drinks with more nutrients (vitamins, minerals, and protein) and less added sugar will help to keep our bodies strong and healthy.

Step 3: Directions for BONE Bingo

We can help build bone by doing weight-bearing exercises too. Weight-bearing exercises are exercises that put weight on our muscles and bones. When we do activities like jumping jacks and push-ups, we put weight on our bones; this pressure can actually make bones stronger.

We must do different exercise to strengthen different bones. (OPTIONAL: Use the Bones Poster to point out different bones.) To strengthen the bones in:

- Our hands (carpals) and arms (humerus) try push-ups, bear crawls, and donkey kicks
- Our feet (tarsals) and legs (femur and tibia) try squats, frog jumps, and one-legged hops

Instruct students to find a partner and distribute BONE Bingo handouts. Students will work together to complete weight-bearing exercises together and spell BONE using the BONE Bingo handout. In order to spell BONE, students must choose to do an exercise from each column of the handout (an exercise from column B, and exercise from column O, etc.) Challenge students to choose exercises in different columns which put weight on different areas of their body. Have one partner pick which exercises to do first together and then the second partner can select the next set of exercises to do together. Give examples and demonstrate as necessary. Have student pairs spread out in the gym, monitor students as they complete the activity to ensure proper form.

Closure/Assessment

Estimated Time: 5 minutes

Step 1: Lesson Review:

Review how to build strong bones by having students talk with a partner.

Below are possible discussion questions:

- How can I build strong bones?
- What are examples of foods and drinks that are high in bone building nutrients?
- What is an exercise that can strengthen my humerus?
- What is an exercise that can strengthen my femur?

Conclude the lesson by reminding students that we need to fuel up with calcium-rich foods and beverages so that we can build strong bones that allow us to be active.

NOTE: If doing the Fuel Up To Build Bones Take Home Challenge, explain during the conclusion.

Ideas for Differentiating Instruction

In Step 1: Analyzing Beverages Directions

Set out three different colored hula hoops. In one hula-hoop (green), students will place beverages that are good for bones, beverages that will strengthen bones by drinking them. In the other hula hoop (yellow), students will place beverages that have no impact on bones—aren't good or bad for strengthening bones. In the other hula hoop (red), students will place beverages that are bad for bones, create weak bones (these drinks would be soda as soda contains phosphates that don't allow calcium to get to the bones).

The Team Challenge

Instruct students to complete the take home challenge: complete every square on the BONE Bingo handout and put a check in the box once the activity is complete.

Points: Two points for each team member that brings back the completed sheet.

