

Foods with Calcium Activity

Grades 5 and 6

Age appropriate nutrition concept: Around the age of 10 to 12, students start to begin to consider and understand the concept of cause and effect, if it is concrete. This activity can help them begin to understand that foods we consume contain nutrients that have an effect in our bodies. This activity outlines foods that have calcium, which is a nutrient that aids in the formation and maintenance of bones and teeth.

Part 1: Create a class set of Calcium Food Cards

Supplies:

- ✓ Art supplies, paper (card stock or a heavier weight paper recommended)
- ✓ Calcium Food Flash Cards (template provided)
- ✓ Calcium Calculator (access online to project for the class or order copies at <https://dairyfarmersofcanada.ca/en/teachnutrition/maritimes/resource-catalogue>)

Note: Use The Calcium Calculator as a reference tool for this activity.

Instructions: Have students create two Calcium Food Cards each (printable template provided) of the foods listed within the Calcium Calculator resource or a food that is a combination of the foods listed on the calcium calculator (i.e. grilled cheese sandwich, or yogurt parfait topped with orange slices and almonds). You may have to provide guidance so that the class creates a class set with a variety of foods and calcium values (make sure the class set has enough calcium dense foods for the activities). Once completed you will have a class set of calcium containing food cards, which you can then use for activities. The completed cards will contain an image of a food, the name of the food, and the amount of calcium in that food as well as the serving size that is associated with that amount of calcium (all of this information is in the Calcium Calculator). See example to the right.

Once the class has created a set of cards, use them for activities.

Part 2: Activity - Foods to Fuel Bone Health

Teaching notes and introduction:

RECOMMENDED CALCIUM INTAKE PER DAY (MG)						
1-3 YEARS	4-8 YEARS	9-18 YEARS	19-50 YEARS	51-70 YEARS		71+ YEARS
				MEN	WOMEN	
700	1000	1300	1000	1000*	1200	1200

Source: Institute of Medicine. Dietary Reference Intakes for Calcium and Vitamin D. 2011.

Reference this table to understand the recommended calcium intake per day for the age of the students you are teaching. If you are teaching grade 5 or 6, you will use the recommended calcium intake per day of 1300 mg.

Context: The period of greatest bone growth is during puberty and adolescence: maximum bone development takes place in girls and boys roughly between the ages of 11 to 17 years and peak bone mass is achieved at an early age; 16-20 in young women and 20-25 in young men. 99% of the calcium in our bodies is in our bones and teeth (the other small percentage is circulating in our blood, for very important reasons like muscle control and blood circulation). Calcium is not made in the body, therefore, it must be absorbed from the foods we eat. To keep bones strong and growing we need to make sure we eat foods that provide our bodies with enough calcium. To help understand which foods provide us with calcium use the **Calcium Food Flash Cards** (that the class created) and use them for the Foods to Fuel Bone Health relay race (or scavenger hunt).

Activity set up:

- Divide your class into groups or teams (4-5 per group as a suggestion)

Curriculum: Mathematics

- ✓ Mental mathematical skills

Curriculum: Health Education

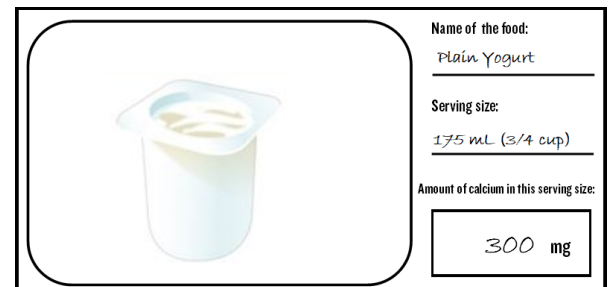
- ✓ The importance and benefits of making healthy food choices

Curriculum: English Language Arts

- ✓ Speaking and Listening
- ✓ Reading and Viewing
- ✓ Writing and Representing

Curriculum: Art Education

- ✓ Developing of imagery using a variety of art media



- Arrange the Calcium Food Flash Cards image side down in a designated area of the classroom (it can be on a table, on the floor, in baskets etc.)
- Use the Recommended Calcium Intake Per Day chart to determine the recommended amount of calcium for your students.

Object of the activity: the teams will collect cards until they achieve the recommended amount of calcium per day.

General rules:

- A team will collect the exact amount of their recommended calcium intake per day. If they go over the recommended amount of calcium per day, they return cards one at a time.
- You can choose to stop the activity when the first team gets to the recommended amount of calcium or allow all teams to finish (you may choose to rank them as they finish– first, second, etc.).
- Complete this activity in a relay-race style - the next person on the team cannot go to retrieve a card until their teammate has returned to the team's 'home base'.
- The retrieved card can only be revealed to show the food and amount of calcium when the student returns to their group.

Option 1 – limiting the number of cards the teams can collect. A team can collect a maximum of six cards to get their recommended calcium intake per day amount (if they get to the amount in less cards that is okay).

Option 2 – not limiting the number of cards the teams can collect, the group needs to collect their recommended calcium intake per day amount, without exceeding that number.

As a bonus, make this activity have more movement.

- If you have access to a larger space, like a multipurpose room or a gymnasium this activity works well. Spread the cards image side down at one end of the room and have the teams start at the opposite end of the room. Use the instructions above.

Once the teams have completed their task, you can then ask them questions that will help increase understanding and extend the learning:

- If you used Option 1 – Ask each group what foods helped them get their recommended calcium intake quickly. If you had the activity stop after one team completed the task ask the teams that did not collect enough calcium how much they are missing and what foods they could add to give them the recommended calcium amount.
- If you used Option 2 - Ask each group how many cards they collected to get their recommended calcium intake for a day. This question will help them understand that one can consume a variety of foods to get the recommended amount of calcium. This question will also highlight that some foods provide more calcium than others do (some foods are more calcium dense).
- Think of a snack that would provide them with 300 mg of calcium.
- Have them review their cards and ask about the variety of foods they collected. Ask who has vegetables, fruits, foods made with whole grains, a combination of foods (i.e. sandwich), protein foods (milk, yogurt, cheese, tofu, beans, lentils, salmon, etc.).

Teacher Knowledge – more information about bone health:

- Vitamin D helps build strong bones by increasing the absorption of calcium. The skin, through sun exposure (UV rays), triggers the process of making Vitamin D in our body, which is why it is referred to as the sunshine vitamin. Our body's ability to start the process from sun exposure depends on factors such as amount and intensity of sun exposure, use of sun protection and melanin content of the skin. Due to these factors, especially the seasonality of UV intensity in Canada we may not produce adequate vitamin D therefore we need to look to foods (and sometimes supplements) to help get the vitamin D we need. The list of foods that contain vitamin D is not long. It includes foods such as: swordfish, canned pink salmon, snapper, egg yolk, canned tuna, milk, and other vitamin D enriched foods and beverages.
- Being active is important for bone growth and maintenance. Physical activity, specifically weight-bearing activities cause new bone tissue to form, which helps make bones stronger.

Calcium Food Flash Cards Template

	Name of the food: _____
	Serving size: _____
	Amount of calcium in this serving size: <div style="border: 1px solid black; width: 100px; height: 30px; margin-left: auto; margin-right: auto; text-align: right; padding-right: 5px;">mg</div>

	Name of the food: _____
	Serving size: _____
	Amount of calcium in this serving size: <div style="border: 1px solid black; width: 100px; height: 30px; margin-left: auto; margin-right: auto; text-align: right; padding-right: 5px;">mg</div>