

Adventures in learning, created  
by Canadian dietitians



*Students explore the roles of vitamins and minerals and the need for a variety of foods to provide the body with a healthy balance.*

### **Learning Expectations:**

1. Understand the need for vitamins and minerals from a variety of foods.
2. Identify the different roles of vitamins and minerals.
3. Recognize foods that provide different vitamins and minerals.

**Subject Links:** Health, Language, Science, Drama

### **Materials & Resources:**

- ☆ Dictionaries, encyclopedias and the Internet
- ☆ Local Dietitians, for example those working in your local health department

**See the Teacher Notes at the back of this resource (on pages 23-26) for more information on this mission.**

### **Class Discussion:**

The *MISSION NUTRITION\** Team wants to learn about the vitamins and minerals people need for good health. As a class, brainstorm a list of all the vitamins and minerals that students know.

For each one that they name, ask if they know what it does for them. For example, calcium helps build and maintain strong bones and teeth. Try to identify and list some of the best food sources for each vitamin and mineral as well. An overview of key nutrients, their functions and sources is included in the *Teacher Notes*.

### **Teaching Tip:**

Our bodies need more than 50 different nutrients to stay healthy. Ask students to look up the words "nutrient", "vitamin" and "mineral" on the Internet, in a dictionary or encyclopedia. Have them write out a definition of each including what they are, why we need them and where they can be found.

### **Activities:**

1. The *MISSION NUTRITION\** Team wants to know what will happen if you don't get enough calcium. As a class or in small groups, conduct the following chicken bone experiment to illustrate how bones get weak when they are depleted of calcium. Take a bone from a cooked chicken leg. Remove all the meat and wash the bone. Try to bend the bone and observe how hard it is to bend or break. Place the bone in a jar filled with vinegar, cover with a lid and leave overnight. Check the bone each day for the next week. To do this, rinse the vinegar off the bone with water. Try bending or breaking the bone again. Then replace the bone in the jar and cover. Ask students to describe their observations. Why did the bone gradually become softer and easier to bend?

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The bones lose strength as the vinegar removes calcium from them. In our bodies, calcium moves out of our bones daily to do other jobs. Your calcium supply needs to be replenished or your body will gradually remove calcium from your bones making them weak and easier to break. It is important to reinforce with students that eating foods with vinegar will not have this effect on bones. This is just a simulation of what happens when you do not eat enough calcium rich foods.

2. Name that vitamin! See if students can help the *MISSION NUTRITION*\* Team solve these A, B, C... vitamin mysteries:

In the past, pilots that flew at night were encouraged to eat lots of carrots to improve their night vision. The same vitamin that helps you see at night is also important for healthy skin and growth. This vitamin is found in orange vegetables and fruits and at the very beginning of the alphabet. (Vitamin A)

This group of vitamins helps release the energy from carbohydrates for your body to use. They can be found in grain products, meats and alternatives. (B-vitamins)

Years ago sailors on long voyages suffered from a mysterious illness called scurvy because they didn't have any fresh fruits to eat on board their ships. In the 19th century they discovered that they could avoid this illness by bringing lemons to eat. What vitamin in lemons and other fruits and vegetables helps to keep your blood and skin healthy? (Vitamin C)

Bent bones from skeletons found in Pyramids dating back 5000 years ago, indicate to scientists that some ancient Egyptians were lacking in this vitamin. It helps your body absorb calcium to build strong bones. You can find it in fluid milk and fortified soy beverages. It's also known as the sunshine vitamin. (Vitamin D)

3. Divide the class into groups of three. Assign a vitamin or mineral to each group secretly, including vitamins A, C, E, B-vitamins, iron, calcium and zinc. Ask each group to research their nutrient without telling other groups which nutrient they are researching. Then have each group dramatize the journey their nutrient takes through the body. The dialogue should communicate their job as a nutrient, how important they are and where they can be found, while classmates try to guess the nutrient.

### Student Mission 2 Vitamin and Mineral Match

*Handy-bot*\* needs help making the right connections between the vitamins and minerals listed on this activity sheet and their primary functions. Students will best be able to complete this activity sheet after they have done the other activities in this Mission.

Use the following Answer Key for this activity sheet

#### Answer Key for Student Mission 2

1. Iron
2. Vitamin D
3. Vitamin K
4. Zinc
5. Phosphorus
6. Vitamin C
7. B Vitamins
8. Vitamin A
9. Calcium
10. Vitamin E



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