

Many Milks

Overview: Students taste test four different milks while comparing color, texture, taste, and cost. In addition, students examine four milk food labels and complete a table comparing calories, fat, and calcium found in the milks.

Objectives: The student will be able to:

- Compare the tastes of four different kinds of milk
- Write a description of the milk they have tasted
- Read the nutrition facts on milk cartons
- Compare and rank the calories, fat, and calcium content



Grades: 3-5

Materials

4 trays (cafeteria style)
1/2 gallon whole milk
1/2 gallon 2% milk
1/2 gallon skim milk
1/2 gallon soy milk

labels (Whole, 2%, Skim, Soy) for each milk
4 small cups per student
Many Milks 3-page handout, one per student
Nutrition Facts sheet, one per group
Teacher Answer Key

Note: Teacher should be aware of students' cow's milk allergies, lactose intolerance, or soy allergies, and adjust the activity with alternative milk, such as almond, oat, etc.

Some brands call skim milk 'fat-free milk,' and some brands call whole milk 'vitamin D milk.'

Procedure

Ask students to read and complete the first page of the Many Milks handout.

Set up four stations, one for each type of milk. Each station should include a sign identifying the type of milk and one small cup per student with one to two ounces of milk.

Ask students to predict which milk will taste the best and the worse and which milk will be the healthiest.

Divide the class into four groups. The groups will rotate to each of the four stations, taste testing the milk at each station, and completing the Milk Taste Test table.

Next, students will explore milk food labels. Tell the class that most foods are required to have a food label with Nutrition Facts. Explain that you can compare the nutrition of two different foods or brands by reading the label. Then show the class where to find the serving size, total calories, fat, and calcium on a food label. Point out that different units are used for different nutrients. The units include calories, grams and milligrams.

Give each group a copy of the nutrition labels. Ask students to work with their group to complete their Milk Nutrition Facts table. *Option: You can give each group just one nutrition label and ask the groups to report back to the class.* Remind students to include units of measurement on the table.

Finish up the lesson by instructing students to answer the final questions individually and holding a class discussion.

Classroom Discussion

Which milk do you think tastes the best? The worst?

Which milk is the healthiest?

Has anyone tasted skim milk before? Did you like it? Did it have more, less or the same amount of calcium as the other milks?

Do you think you could switch to a lower fat milk, like skim milk?

Did you know some people are allergic to cow's milk and cannot drink it without getting sick? Other people are lactose intolerant and can't drink cow's milk either. Soy milk is a good option for people who can't drink cow's milk. Some people may be allergic to soy, so soy milk is not an option for everyone. (People with a lactose intolerance can drink Lactose Free milk or take lactase enzymes when they drink regular cow's milk.)

Has anyone tasted soy milk before? Did you like it? Did it have more, less, or the same amount of calcium as the other milks?

Do you think you get more nutrients from drinking soda or milk? Kool-aid or milk? Tea or milk?

Evaluation:

Completed Many Milks handout

New Jersey Learning Standards

Comprehensive Health and Physical Education – Nutrition

2.2.5.N.1: Explain how healthy eating provides energy, helps to maintain healthy weight, lowers risk of disease, and keeps body systems functioning effectively.

Whole Milk

Nutrition Facts		
Serving Size: 1 cup		
Servings Per Container: 8		
Amount Per Servings		
Calories 150		
Calories from Fat 70		
		% Daily Value
Total Fat	8 g	12%
Saturated Fat	5 g	25%
Trans Fat	0 g	0%
Cholesterol	35 mg	11%
Sodium	125 mg	5%
Total Carbohydrate	12 g	4%
Dietary Fiber	0 g	0%
Sugars	12 g	
Protein	8 g	
Vitamin A	6%	
Calcium	30%	
Vitamin C	4%	
Iron	0%	
*Percent Daily Values are based on a 2,000 calorie diet		

2% Milk

Nutrition Facts		
Serving Size: 1 cup		
Servings Per Container: 8		
Amount Per Servings		
Calories 130		
Calories from Fat 45		
		% Daily Value
Total Fat	5 g	8%
Saturated Fat	3 g	15%
Trans Fat	0 g	0%
Cholesterol	20 mg	7%
Sodium	125 mg	5%
Total Carbohydrate	13 g	4%
Dietary Fiber	0 g	0%
Sugars	12 g	
Protein	8 g	
Vitamin A	10%	
Calcium	30%	
Vitamin C	4%	
Iron	0%	
*Percent Daily Values are based on a 2,000 calorie diet		

Skim Milk

Nutrition Facts		
Serving Size: 1 cup		
Servings Per Container: 8		
Amount Per Servings		
Calories 80		
Calories from Fat 0		
		% Daily Value
Total Fat	0 g	0%
Saturated Fat	0 g	0%
Trans Fat	0 g	0%
Cholesterol	<5 mg	0%
Sodium	130 mg	5%
Total Carbohydrate	12 g	4%
Dietary Fiber	0 g	0%
Sugars	12 g	
Protein	8 g	
Vitamin A	10%	
Calcium	30%	
Vitamin C	4%	
Iron	0%	
*Percent Daily Values are based on a 2,000 calorie diet		

Soy Milk

Nutrition Facts		
Serving Size: 1 cup		
Servings Per Container: 8		
Amount Per Servings		
Calories 100		
Calories from Fat 22		
		% Daily Value
Total Fat	2.5 g	4%
Saturated Fat	0 g	0%
Trans Fat	0 g	0%
Cholesterol	0 mg	0%
Sodium	90 mg	4%
Total Carbohydrate	16 g	5%
Dietary Fiber	2 g	0%
Sugars	8 g	
Protein	4 g	
Vitamin A	6%	
Calcium	30%	
Vitamin C	4%	
Iron	0%	
*Percent Daily Values are based on a 2,000 calorie diet		

Many Milks

Did you know there are many different kinds of milk?

Around the world people drink many different kinds of milk including cow milk, goat milk, buffalo milk and camel milk. In the United States, "milk" usually means cow milk. You can easily find different types of cow milk at the grocery store. For example, you can buy whole milk, 2% milk, 1% milk and skim milk.

No other single food can match the nutrition of milk! Milk is full of calcium, which helps build strong bones. It is also packed with other nutrients your body needs. These include protein, carbohydrates, phosphorus, riboflavin, vitamin A and vitamin D.

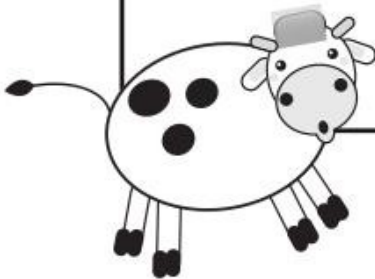
Sadly, some people cannot drink regular milk without getting sick. They may be able to drink soy milk, rice milk or lactose-free milk. Soy milk and rice milk don't come from cows or any other animals. Instead, they are made from plants. Calcium is usually added to these milks. Lactose-free milk is made from cow milk but has an added ingredient that makes it easier to digest. Enjoy tasting many milks.

Doodle Bugs

In the reading, circle the nutrient that helps build strong bones.

Draw a box around two milks that do not come from animals.

What kinds of milk have you tasted?



SCIENTIFIC INQUIRY: **Comparing Milk**



Your class will need:

96 small cups

Food labels from and samples of: Whole milk
 2% milk
 Skim milk
 Soy milk

Go to all four milk stations with your group. At each station, study the milk and try a sample. Note the color, the way it feels in your mouth and flavor. Use descriptive words (like creamy white, thick, thin, watery or sweet) to fill in the table.

Milk Taste Test

Type of Milk	Color Is it a creamy white, off-white or blue-white?	Texture (feel in your mouth) Is it thick, creamy or thin?	Flavor Is it sweet, sour or watery?
Whole milk			
2% milk			
Skim milk			
Soy milk			

Which milk did you like best?

SCIENTIFIC INQUIRY:
Comparing Milk (continued)

Use the Nutrition Facts on the milk food labels to fill in the table below.

Milk Nutrition Facts

Type of Milk	Calories How many calories per serving?	Fat How many grams of fat per serving?	Calcium What is the Percent Daily Value for calcium?
Whole milk			
2% milk			
Skim milk			
Soy milk			

Draw a star beside the milk that has the least amount of fat.

List the kinds of milk in order from least fat to most fat.

Did any kind of milk have less than 30% of the Daily Value of calcium?
If so, which one?

If you drink whole, 2% or 1% milk, do you think you can switch to skim milk?

Answer Keys

Many Milks

Doodle Bugs

Circle: **Calcium**
Box: **Rice milk, soy milk**
Fill-in the blank: **Answers will vary.**

SCIENTIFIC INQUIRY:

Comparing Milk

Whole milk: **Creamy white; thick and creamy; sweet and creamy**
2% milk: **White; thick; sweet**
Skim milk: **Pale white or blue white; thin; sweet**
Soy milk: **Off white or light tan; medium thin; sweet and nutty**

Which milk did you like best? **Answers will vary.**

Note: Nutrition fact answers will vary depending upon brands.

Whole milk: **150 calories; 8 grams fat; 30% DV calcium**
2% milk: **120 Calories; 5 grams fat; 30% DV calcium**
Skim milk: **80 Calories; 0 grams fat; 30% DV calcium**
Soy milk: **100 Calories; 2.5 grams fat; 30% DV calcium**

Star: **Skim milk**

List least fat to most: **Skim, soy, 2%, whole**

Did any kind of milk have less than 30% DV of calcium? **Note, some soy milks may not be fortified with 30% DV of calcium.**

If you drink whole, 2% or 1%, can you switch to skim? **Answers will vary.**