



## Dairy vs. Plant-Based Milk

### OBJECTIVES

Students will explore milk from cows, almond, soy, and oat to find out which is the healthiest for the body and for the environment.

Students will consider the significance of the Massachusetts' dairy farms to land stewardship.

### MA STATE FRAMEWORK(s)

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### ESSENTIAL QUESTIONS

- What are some important differences between cow's milk and plant-based milk?
- How is the environment impacted by animal and plant based dairy?
- What are the nutritional benefits of consuming plant-based milk?
- How do you make soy milk, almond milk, rice milk, and coconut milk?

### MATERIALS NEEDED

- Projector & Screen or Individual Laptops
- Video: [Which Type of Milk is Best for You?](https://youtu.be/s6TXDFp1EcM) (https://youtu.be/s6TXDFp1EcM)
- "Which Milk is Best" Handout (attached)
- Video: [Tour of Barstow's Dairy Farm](https://youtu.be/17CUiLLYtB4) (https://youtu.be/17CUiLLYtB4)

### LESSON

#### Introduction

Ask students to list all of the kinds of milks they have heard of, seen or tasted from the grocery store. Generate a master list on the board. Ask students why they think so many variations of animal dairy are being created.

Watch video: *Which Type of Milk Is Best for You?*

Have students work to answer the handout questions with a partner or small group. After students have had time to discuss in small groups, bring their attention back to a larger class discussion.

Next, watch the video: *Tour the Barstow's Dairy Farm and Robot Milkers* filmed by Kestrel Land Trust. As students watch, ask them to consider this question: How does Barstow's care for their animal health, milk quality, and land stewardship? Why is the preservation of Massachusetts dairy farms so important? Collect their ideas in a post-video discussion.

## EXTENSIONS & VARIATIONS

### How to Make Plant Based Milk

There are many different types of plant-based milk on the market. Some of the most popular are soy, almond, rice, coconut, pea and oat and each has its own unique properties and benefits and can replace the use of dairy.

You will need one night to soak and 30-40 minutes to prepare the milk ingredients you choose: either 1 cup of soybeans, rice or shredded coconut. You will also need water, and sweetener and/or salt if desired.

#### SOY MILK

Ingredients:

1 cup soybeans

4 cups water

Sugar or sweetener (optional)

Salt (optional)

Instructions:

1. Soak soybeans in water overnight.
2. Rinse soybeans and place them in a blender with 4 cups of water. Blend until smooth.
3. Strain the mixture through a cheesecloth or strainer to remove any solids.
4. Add sugar or sweetener and salt, if desired. Store in a sealed container in the fridge.

#### RICE MILK

Ingredients:

1 cup rice

4 cups water

Sugar or sweetener (optional)

Salt (optional)

Instructions:

1. Rinse rice and place it in a blender with 4 cups of water. Blend until smooth.
2. Strain the mixture through a cheesecloth or strainer to remove any solids.
3. Add sugar or sweetener and salt, if desired. Store in a sealed container in the fridge.

#### COCONUT MILK

Ingredients:

1 cup shredded coconut

4 cups water

Sugar or sweetener (optional)

Salt (optional)

Instructions:

1. Rinse shredded coconut and place it in a blender with 4 cups of water. Blend until smooth.
2. Strain the mixture through a cheesecloth or strainer to remove any solids.
3. Add sugar or sweetener and salt, if desired. Store in a sealed container in the fridge.

## "WHICH MILK IS BEST FOR YOU" DISCUSSION QUESTIONS

- 1) When making a plant-based milk, what happens to the plant source before it is fortified with vitamins and minerals and diluted?
- 2) Which mineral does not occur naturally in plant-based milks, but is present in cow's milk?
- 3) Which type of milk has the highest levels of carbohydrates in comparison to other plant-based milks?
- 4) How many liters of water are required to produce a glass of almond milk?
- 5) How much more greenhouse gas does dairy milk contribute when compared to plant-based milks?
- 6) Although the protein content may vary between cow's milk and plant-based milks, what are the differences in protein content between the different plant-based milks and the quality of the protein in terms of amino acid profile?
- 7) The fats in plant-based milks is thought to be healthier than that of cow's milk. What is the reasoning for this and is the same for all types of plant-based milks?
- 8) If considering the environmental impact of plant-based milks where you live, which would have the lowest transport impact associated with it?
- 9) When people think of milk the first thing that comes to mind is cow's milk. However, in recent years there has been a growing trend to consume 'milks' that are derived from plants as healthier, more environmentally friendly alternatives. A number of different plant sources are used for this, such as soy, oat, coconut, pea, but which one of them is best?