



Cluster 1

Why Soybeans?

Lessons:

1. Those Oily Chips!
2. Why Soybeans?

Guiding Question:

How are plants (soybeans) used in our lives?

Michigan Benchmarks for Science

Elementary

I.1.E.1
I.1.E.4
I.1.E.6

Middle School

I.1.MS.1
III.5.MS.5

Those Oily Chips!

Activity:

Observe a common food product that contains a soybean product.

Purpose:

- a) Link soybeans to students' lives. Motivate students about exploring soybeans.

Background:

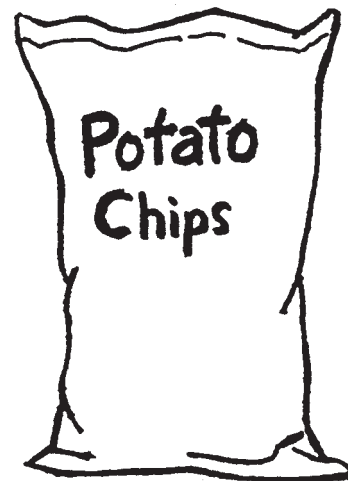
Take a look at the potato chip package provided. Notice that soybean oil was used to cook the chips. Often soybean cooking oil is referred to as "vegetable oil" or "vegetable shortening."

Materials:

- packaged potato chips
- paper towels

Time:

30 Minutes



Procedure:

1. Show the bag of chips to the students. Ask the students to think about how the chips were cooked. Have the students write their ideas on paper.
2. Pair up the students to share their ideas. Together they should decide how the chip was cooked.
3. The pairs then share their ideas with the whole class. Write their ideas on a class chart.
4. Have the pairs lay a chip on a paper towel. Residue will be left on the towel.
5. Ask: What has soaked into the paper towel? (oil) What is the oil made from? (vegetable oil, most likely from soybeans) Discuss the various answers.
6. Ask a pair to examine the label. (Explain to students that most oil is made from soybeans or a mixture of plant oils.)
7. As a whole class, brainstorm a list of other products that students think might have soybean products in them. (Accept all ideas the students list.)

Extended Activities:

1. Cook homemade potato chips in vegetable oil.

Why Soybeans?

Activity:

Examine common food and household products to determine their ingredients.

Purpose:

- Analyze packaging labels.
- Understand how plants contribute to the welfare of humans.
- Determine the role of soybeans in everyday products.
- Classify products into categories.

Vocabulary:

edible
non-edible
chart
graph

Background:

Soybeans provide the world with protein and oil used in food, animal feed, and industrial applications. A 60-pound bushel of soybeans makes about 11 pounds of oil and 48 pounds of soymeal (ground up pulp).

There are many edible uses of soy products. Soybean oil is used in margarine, mayonnaise, salad dressing, and cooking oil. Often soy cooking oil is sold at the grocery store labeled as "vegetable oil" or "vegetable shortening."

Soymeal is a protein-rich food that can be refined and made into soy flour, soy concentrate, or soy isolates. Soy flour can be used in baked goods; isolates can be used in high-protein drinks. Lecithin, extracted from soybean oil, can be used in pharmaceuticals and as a natural emulsifier in chocolate candy.

Other edible soy products include the more traditional soyfoods or Oriental foods such as soy sauce, tofu, and tempeh.

Materials:

- SoyNews
- Venn diagram chart (p. 8)
- labels
- worksheet (p. 7)
- soybeans

NOTE*
This activity goes well with Cluster 5

Time:

40 minutes

Procedure:

DAY ONE:

1. Show the students the labels.
2. Ask them to discuss what these foods have in common. Use the *Venn diagram chart* (p. 8) to record student answers.
3. Read the labels on all products. What product do they all have in common? (Soybeans)
4. Ask: What is a soybean? What does it look like? Give each student a bean to examine. Discuss its physical characteristics.

DAY TWO:

5. Ask the students to look for soybean products in their homes. If they can, bring in the labels and/or boxes for classification. Also, encourage them to find products that are not food items. If products cannot be brought to school, the students can use the *homework sheet provided* (p. 7) to record items found. Hand out the sheet for listing soybean products.
6. Make a list of edible and non-edible products found at student homes.

Extended Activities:

1. Visit a local supermarket. Assign groups of students to different aisles to see if they can locate ten or more items that contain soybean products.
2. Have students visit an assigned section of the grocery store and bring a list of products containing soy back to the class.
3. Make a soybean collage. Students can locate pictures of products containing soybeans in magazines and newspapers. They can also use labels from products found at home.

Soybeans Uses

Edible

Baby food or formula
Bakery products
Medicines
Candies
Canned foods
Cereals
Cooking oils
Diet food products
Frozen dinners
Frozen pizza
Hot dogs
Hypo-allergenic milk
Imitation meat products
Luncheon meat
Margarines
Noodles

Prepared Mixes:

Cake
Pancake
Muffin

Non-edible

Adhesives
Cleaning materials
Cosmetics
Fabrics
Inks
Leather substitutes
Paints (water-based)
Particle boards
Pesticides
Plastics
Polyesters
Pet food
Livestock feed
Soap
Shampoo
Detergents
Rubber



Name: _____

Date: _____

Get a clue about the things in your
home made from  **SOYBEANS**

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

Compare and Contrast Chart

