



**SOUTH DAKOTA STATE
UNIVERSITY EXTENSION**

In season:



Summer

Beans

Dakota: Cehbe'ca

Lakota: omníčá

Lesson Plan

Objectives

Participants will:

- identify beans as a vegetable from My Plate and their nutritional contribution to good health.
- increase knowledge in growing, selecting, storing, nutrition and use of beans.
- demonstrate use of beans in a healthy recipe.
- demonstrate use of equipment needed to prepare beans recipe.

Items Needed for the Lesson

- Beans visuals
- MyPlate poster
- Measuring cups (½ cup and ¼ cup)/tennis ball
- Parts of a Plant visual
- Daily Recommendations chart

Handouts or Take Home Items

- Pick It! Try It! Like It! Preserve It! fact sheet

Recipe Choices

- Green Beans with Tomatoes
- Bean Dumplings

Cooking and Food Safety Skill Sheets

- Handwashing
- Washing Fruits and Vegetables
- Knife Safety and Cutting Boards
- Measuring Liquid and Dry Ingredients
- Stove Top Safety

Other Cooking and Food Safety Skills

- Kitchen terms - sauté, toss and simmer

Supplies for Bean Lessons

- Green Beans with Tomatoes
 - » Knife
 - » Cutting board
 - » Non-stick pan
 - » Measuring spoons
 - » Spoon
 - » Liquid measuring cup
- Bean Dumplings
 - » Measuring spoons
 - » Dry measuring cups
 - » Liquid measuring cup
 - » Large pot
 - » Stove
 - » Colander
 - » Spoon

Notes

- Dakota and Lakota translation of the name of the produce is available at the end of this document.

What You Say:	What You Do:
Every class we're going to learn about a different fruit or vegetable. I'm going to give you some clues and I want you to try to think of what it is. After each clue, raise your hand if you think you know what it is. • Following tomatoes, this is the second most popular item to be grown in home gardens. • Most of them are green but can also be purple or yellow. • They are 4-6 inches long and have a round shape. • Green, string, snap – they are all the same. (Answer: Beans.)	• Name off each clue, allow a few guesses before moving on to the next clue. • After someone guesses the answer, or you tell them, show them visuals of beans.
MyPlate shows us how to eat healthier. As the MyPlate diagram shows, we should be filling half our plates with fruits and vegetables. Depending on our age and gender, we should be eating between 1-4 cups of vegetable a day. Eating beans can help us to meet this recommendation. There are 5 subgroups of vegetables: dark green, red and orange, beans and peas, starchy and others. We need to make sure we are eating vegetables from each of these groups because they each have different vitamins and nutrients in them. Which group do you think beans belongs to? (Answer: This is kind of a trick question. Green beans belong in the "others" subgroup, but shell beans belong in the "beans and peas" subgroup.) What other food group can shell beans go into? (Answer: Protein.)	• Point to MyPlate poster. • Show Daily Recommendations visual. • Show Vegetable Subgroups visual. • Call on someone who would like to answer.
Different vegetables come from different parts of the plant. Vegetables are either a root, stem, leaf, fruit, flower or seed. What part of the plant do you think beans are? (Answer: We eat the fruit and the seed of green beans and the seed of shell beans.) Do you know why plants have fruits and seeds? (Answer: The fruits protect and feed the seeds of the plant. The seeds grow new plants.)	• Show Parts of Plant visual, call on people to answer questions. • Show Plant Lifecycle visual.

What You Say:	What You Do:
How many of you have grown beans in your garden before? Beans are a warm season vegetable. They should be planted after the last frost. Seeds should be planted about 1 inch deep. Bean plants can be bush or pole types. Bush bean plants do not need stakes to hold them up. Pole type bean plants climb up a support, which helps to save space in the garden and makes harvesting the beans easy.	• Allow discussion. • Show a packet of bean seeds if possible. • Show visuals of the 2 types of beans growing.
Green beans used to be called "string beans" because of the fiber that grew along the seam of the bean pod. Plant scientists have developed green beans that do not have the string anymore and the beans are now more often called snap beans due to the sound they make when broken into pieces to cook.	• If possible show a snap bean pointing out where the string was once located and "snap" the bean to demonstrate the sound.
Snap beans are immature beans with tender edible pods. Even though we often call them green beans, they can be yellow, purple or even speckled.	
Beans should be picked from the garden when they are straight and tender. If you see the seeds bulging in the pods, they are over mature. Over mature beans are tough and taste stringy. When buying fresh beans at the grocery store, look for beans that are no thicker than a pencil and that are bright green and crisp. How should we store beans? Store unwashed beans in an open plastic bag in the refrigerator. They will keep for 3-5 days. When you are ready to use them, wash them in cold water and remove the stems. They can be prepared whole, broken or cut into pieces. Shell or dried beans are beans that are allowed to mature and produce fat seeds. The pods become tough and are not able to be eaten. They are dried and shelled for later use. These shell beans come in many different shapes and sizes and can be stored for months. Lima, kidney and pinto beans are examples of dried beans.	• If possible, show a bean that is over mature. • Show a pencil to reference size.

What You Say:	What You Do:
Why should we eat beans? Beans are a great source of fiber, protein and folate. Beans also have iron, potassium and phosphorus. Phosphorus helps form teeth, bones and cell membranes, helps the body use B Vitamins and increases endurance. Potassium helps nerves to function and muscles to contract. It also helps regulate the heartbeat. Folate is a B vitamin that helps make new cells and helps prevent spine and brain birth defects of babies in pregnant women. Fiber is what keeps our bodies regular.	• All participants to give answers. • Discuss benefits of eating beans.
What are different ways you like to eat beans? Fresh snap beans can be eaten raw, as a snack or tossed in salads. They can also be boiled, steamed, microwaved or stir-fried. Use as little water as possible when cooking. One half cup of green beans counts as ½ cup in the MyPlate vegetable group. One half cup is about 1 cupped handful or about 10 medium size green beans. We can get green beans canned and frozen. All forms count toward the recommended amount of vegetables we should try to get each day.	• Allow participants to give answers. • Show a ½ cup measuring cup. • Demonstrate a cupped handful.
A 14 ½ oz. can of green beans contains about 1 ½ cups or 3 ½ servings. Canned green beans can be heated and eaten or used in main dishes, soups and salads. Refrigerate leftover canned green beans in a covered container. Store canned goods in a cool, dry place.	• Show a can of green beans.
A fun way to eat green beans is to make Green Bean French Fries! Spread fresh green beans out on a shallow baking pan and sprinkle them with a little olive oil, salt and pepper. Bake them at 400 degrees for 20-25 minutes. Turn them over half way through cooking.	• Call on someone for the answer. • Refer to Handwashing skill sheet.



= for adults or older youth

What You Say:	What You Do:
Are you ready to try out a recipe using beans? What is the first thing we always do before preparing food? (Answer: Wash hands.)	If handwashing wasn't reviewed, review Handwashing skill sheet.

Beans – *original to South Dakota prior to European settlement.*

Dakota name – Cehbe'ca Lakota name – omníča

A favorite amongst many tribes, this plant produced two types of seeds, one below ground and one above ground, the one produced below ground was about the size and shape of a lima bean and contained everything needed to sustain life.

When some tribes planted, they put corn, beans and squash together so they could help each other. They planted the corn on top of a little mound, after the plant was high enough, they planted the beans at the base of the corn so the beans could use the corn plant as a trellis to climb and grow toward the sun. The squash was planted throughout the corn and beans, because of the size of the squash leaves, they helped the ground retain moisture and prevent weeds from growing.

Dakota word translation and perspective provided by a member of Hunkapti Dakota.

Lakota word translated by Jeshua Estes

Use this page if you are going to prepare Green Beans with Tomatoes

Equipment List

- Knife
- Cutting board
- Non-stick pan
- Measuring spoons
- Spoon
- Liquid measuring cup
- Stove/countertop burner

What You Say:	What You Do:
Today we are going to be making Green Beans with Tomatoes. Let's read through the recipe together before we begin.	• Pass out the recipes. Read aloud with participants.
How many food groups are represented in this recipe? (Answer: 1, the vegetable group-green beans, tomato, onion, garlic, potato.)	• Read through the ingredients and name the food group.
We will wash the vegetables first.	• Review Washing Fruits and Vegetables skill sheet.
We will be using a knife and cutting board to prepare the vegetables. What do we need to know about knives and cutting boards? We will be using the stove top to prepare the beans with tomatoes. What are some things to remember about using the stove top?	• Allow discussion. • Review Knife Safety and Cutting Boards skill sheet. • Review Stove Top Safety skill sheet.
We have to measure some water for this recipe. How do we measure a liquid ingredient?	• Review Measuring Liquid and Dry Ingredients skill sheet.
Some cooking terms used in this recipe are sauté, toss and simmer. What do these cooking terms mean? (Answer: Sauté – to cook and brown food in a small amount of hot fat; Toss – to combine ingredients with a lifting motion; Simmer – to cook slowly in liquid over low heat. The surface of the liquid should be barely moving, broken from time to time by slowly rising bubbles.) Many vegetables can be purchased in the canned or frozen form when fresh is not available. They can be substituted for fresh vegetables in this recipe.	• Call on participants that would like to define or describe the cooking terms sauté, toss and simmer.

Use this page if you are going to prepare Bean Dumplings

Equipment List

- Measuring spoons
- Dry measuring cups
- Liquid measuring cup
- Large pot
- Stove/countertop burner
- Colander
- Spoon

What You Say:	What You Do:
Today we are going to be making Bean Dumplings. Let's read through the recipe together before we begin.	Pass out the recipes. Read aloud with participants.
How many food groups are represented in this recipe? (Answer: 1, the vegetable group- cornmeal and beans.)	Read through the ingredients and name the food group.
We will use the stove top to prepare cornmeal. What are some things to remember when using the stove top?	- Allow discussion - Review Stove Top Safety skill sheet.
We have to measure some water for this recipe. How do we measure a liquid ingredient?	Review Measuring Liquid and Dry Ingredients skill sheet.
The cooking term simmer is used in this recipe. What does it mean? (Answer: Simmer - to cook slowly in liquid over low heat. The surface of the liquid should be barely moving, broken from time to time by slowly rising bubbles.)	Call on participants that would like to define or describe the cooking term simmer.

Visuals



Bean and bean flower growing on the plant



Fresh Green beans



Variety of dried beans



Variety of fresh beans

Beans Nutrition Information

Type	Serving Size/Weight in grams	Calories	Fiber (g)	Vitamin A (mcg)	Vitamin C (mg)	Potassium (mg)	Folate (mcg)
Green Beans, raw	1 cup, 100g	31	3	35	12	211	30
Green Beans, cooked	1 cup, 125g	44	4	40	12	182	41
Daily Recommendations RDA=Recommended daily allowance AI=Adequate intake	1-4 cup servings of vegetables per day depending on age	Varies according to age and activity level	AI (depending on age) ranges from 14-33.6 g	Daily Value based on a 2,000 calorie per day diet	RDA (depending on age) ranges from 25-90 mg	AI (depending on age) ranges from 3,000-4,700 mg)	RDA (depending on age) ranges from 150-400 mcg)

Bean Sources

Clues

- Home Garden Green Beans, UGA Cooperative Extension: extension.uga.edu/publications/detail.html?number=C1006

Information

- web.extension.illinois.edu/vegguide/grow_bean.cfm
- fruitsandveggies.org/fruits-and-veggies/green-beans/
- michigannutritionnetwork.org/wp-content/uploads/2016/05/green-beans-family-newsletter-2016.pdf
- extension.umaine.edu/publications/4255e/
- extension.illinois.edu/
- bedford.tennessee.edu/snap-beans/
- ag.umass.edu/nutrition/publications-resources/produce-spotlight/green-beans-0
- medlineplus.gov/potassium.html
- medlineplus.gov/folicacid.html
- FoodData Central (usda.gov): fdc.nal.usda.gov/index.html

Recipe

- eatfresh.org/recipe/side-dish/bean-dumplings

Dakota word translate and perspective

- Provided by a member of Hunkapti Dakota.

Lakota translation

- Translated by Jeshua Estes

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SOUTH DAKOTA STATE
UNIVERSITY EXTENSION

In season:



Summer

Beans

Dakota: Cehbe'ca

Lakota: omníča

Pick it!

When buying fresh, select slender beans, no thicker than a pencil; if too mature, the seeds will be visible through the pod.

Store unwashed beans in a plastic bag, for up to a week, in the refrigerator.

Shelled/dried beans have been allowed to mature and then harvested. Dried beans come in many colors, shapes, sizes and can be stored for months.

Wash just before preparation, drain well. Trim off ends using a knife.

Fresh beans may be eaten raw in salads, cooked as a side dish or as part of a main dish.

Try it!

Stir-frying preserves nutrients; boiling and microwaving are also common.

When boiling, cook, covered about 4 minutes, cooking 1 pound or less at a time.

Dried beans are soaked to absorb water and will become double to triple their size; cook to make them edible and digestible.



Types of Beans

Edible Pod Beans: Called string beans or snap beans, include yellow, purple and green

Shell beans: Dried and shelled, includes lima, kidney, pinto or canned beans

Edamame: Fresh or frozen shell bean, eaten as whole pods or shelled fresh beans



Did you know...

Beans and legumes are good sources of manganese. Manganese is important to break down carbohydrates and helps grow cartilage.

Like it!

Green Beans with Tomatoes

Ingredients

- 1 ½ pounds fresh green beans
- 1 large ripe tomato, cored and chopped
- ½ cup onion, chopped
- 1 clove garlic, minced
- 2 Tablespoons olive oil
- 1 potato, cubed
- Salt and pepper to taste
- 1 cup water

Directions

1. Wash the green beans and trim the stem ends. Wash the tomato; core and chop it. Leave skin on. Set both aside.
2. Heat the olive oil in a non-stick pan.
3. Add onions and saute for 1 minute.
4. Add garlic and tomatoes and cook for 1 minute.
5. Add the green beans and potatoes and toss into the mixture.
6. Season with salt and pepper.
7. Pour in water, cover and let simmer for 10 minutes or until potato is tender.
8. Serve hot.

Frozen green beans can be substituted for fresh. Fresh tomato can be replaced with 1 can of diced tomatoes. Frozen onions can be used in place of fresh onion.

Yield 6 servings

Nutrition Facts per Serving:

Calories 100; Fat 5g; Cholesterol 0mg; Sodium 20mg; Carbohydrates 13g; Fiber 4g; Sugar 4g; Protein 3g

Bean Dumplings

Ingredients

- 2 ½ cups whole grain blue or yellow cornmeal/masa/hominy/grits
- 2 cups boiling water
- 1 (15.25 ounces) can cooked brown or red beans
- ½ teaspoon salt

Directions

1. In a large pot, stir together cornmeal and boiling water until there are no lumps. Cook for 3 minutes over low heat, stirring constantly.
2. Rinse and drain beans. Add beans and salt to moistened cornmeal. Stir well.
3. Shape corn dough into small balls.
4. Drop the corn balls gently into a large pot of boiling water. Reduce heat to low and simmer the dumplings gently until cooked to the center, about 30 minutes.

*To keep the dough from sticking to your palms, wet your hands with cold water before rolling each ball. While cooking the dumplings, do not let the water come to a fast boil, as they may fall apart.

*Variations: Stir in sliced scallions, whole corn kernels, roast red peppers, minced jalapeños, ground cumin or garlic powder for extra flavor.

Yield 8 servings (3 pieces each)

Nutrition Facts per Serving:

Calories 136; Fat 1.3g; Cholesterol 0mg; Sodium 244mg; Carbohydrates 28g; Fiber 3.6g; Sugar 4g; Protein 3.9g

Sources: eatfresh.org/recipe/side-dish/bean-dumplings/

Dakota Perspective (Beans)

Dakota: Cehbe'ca

Lakota: omniča

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**Find more recipes
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