EAT TOGETHER EAT BETTER

BEAN MEASURING ACTIVITY

TARGET AUDIENCE	Grades 3 & 4
ESTIMATED TIME	50 minutes (may also do in two lessons by teaching the nutrition piece first, then following up at another time with the measuring activity)
NUTRITION EDUCATION LEARNING OBJECTIVE	By the end of this activity, students will be able to: • Identify dry beans as a lean protein source, • Understand that protein helps us build strong muscles, • Practice using measuring cups as an important skill when cooking.
CURRICULUM INTEGRATION	• Math • Social Studies
EALR/GLE INTEGRATION Math	3.3 Core Content: Fraction Concepts. 3.6 Core Processes: Reasoning, problem solving, and communication. 4.2 Core Content: Fractions, decimals and mixed numbers. 4.5 Core Processes: Reasoning, problem solving and Communication.
CLASSROOM SKILLS	• Discover how various fractions all add up to 1. • Making a prediction. • Cooperation—working as a team.
BASIC NUTRITION CONCEPTS	• Beans are a healthy lean protein source that belong in the meat and beans group of MyPyramid and the protein group of MyPlate. • Protein helps us build strong muscles and provide framework for growth. • Math skills are important when we are cooking.
SUPPLIES ☑ Provided with lesson 📽 For display using document camera	• Bean Introduction script ☑ 📽 • World map (optional but helpful) • Four types of dried beans ☑ • Measuring cups (1 cup, ½ cup, ⅓ cup, ¼ cup) ☑ • Bean Activity worksheet ☑
ACTIVITY TASKS	See reverse.
SOURCE	Carolyn A. Lee, MS, RD
SA SUBMITTED BY	Family Meals Work Group

Activity Tasks for

Bean Measuring Activity (Grades 3 & 4)

Part One

1. Set out beans and measuring cups so they may be used by table groups.
2. Read through pages 1-6 of the Bean Introduction Script with the class. Reference a world map if available. Allow time for questions and clarification. Invite students to share ways they enjoy eating beans at home. What foods do they enjoy eating with them?

Part Two

3. Project page 7 to continue lesson. Finally, project a copy of the Bean Measuring Worksheet (Side 1) on the document camera and confirm that students understand the assignment. Give directions for how students will take turns using the measuring equipment. (You may choose to have half the class do Side 1 of the worksheet and half the class do Side 2 to begin and then switch, or have all do Side 1 at the same time.) Allow time for students to complete the activity.
4. Project a copy of Side 2 of the Bean Measuring Worksheet (More Bean Math) on the document camera. Confirm that students understand the directions. Allow time for students to complete the activity.
5. When all students have completed both sides of the worksheet, discuss how students arrived at their answers.
6. Conclude by emphasizing that math is an important skill to use when cooking and that cooking is a fun activity to do at home with your family. Remind students that beans are a healthy protein source that can be adapted to many different tastes and types of cooking.

Extension Activities

1. If scales are available, have students weigh the various amounts of beans to determine how much they weigh (1 cup, ½ cup, etc.)
2. Have students talk with their families about the various ways they like to prepare beans. Have students report back to class and bring recipes if available.
3. Discuss various ways that measuring is important in cooking. What situations could happen if measuring of key ingredients was done incorrectly?

WASHINGTON STATE UNIVERSITY EXTENSION

This material was funded by USDA's Supplemental Nutrition Assistance Program. The Supplemental Nutrition Assistance Program provides nutrition assistance to people with low income. It can help you buy nutritious foods for a better diet. To find out more, contact your local DSHS Community Service Office. June 20, 2013

Bean Measuring Activity

Step One

- Find all four measuring cups.
- Line them up from smallest to largest.

Step Two

- Look at the chart to the right.
- We want to find out how many different size cups it takes to fill the 1 cup measuring cup.
- Fill the ½ cup measuring cup with beans and make it level on the top. Pour these beans into the 1 cup measuring cup. Do this one more time.
- Is the cup full? How many ½ cups does it take to fill 1 cup? Write your answer in the chart.

Step Three

- Repeat this for the ⅓ cup and then the ¼ cup.
- Each time you want to see how many of the different size smaller cups it takes to fill the one cup. Fill in the chart .

Step Four

- Do you see a pattern?
- You do not have a ⅛ cup measure.
- If you did, how many times do you think it would take to fill the 1 cup so it would be full?
- Write your prediction beside the ⅛ cup.

Size of Measuring Cup	How many fill a 1 cup measure?
1 cup	1
½ cup	
⅓ cup	
¼ cup	
⅛ cup	

More Bean Math

Do the following activities with your table group.

1. Choose 2 types of beans to work with. Get enough beans so that your group can set out 60 beans with equal amounts of each of the 2 types of beans. You should have 60 beans – ½ of one type and ½ of the other.

   How many of each type do you have? _____

   Arrange them and have your teacher check your work.

   Write a math equation to show how you arrived at your answer:

   _____

2. Choose 3 types of beans to work with. Show what 60 beans look like when you have ⅓ of each of the 3 types of beans you chose.

   How many of each type do you have? _____

   Arrange them and have your teacher check your work.

   Write a math equation to show how you arrived at your answer:

   _____

3. Now use all 4 types of beans. Show what 60 beans look like when you have ¼ of each of the 4 types of beans.

   How many of each type do you have? _____

   Arrange them and have your teacher check your work.

   Write a math equation to show how you arrived at your answer:

   _____

Beans are popular all over the world!

Why?

They taste good and they are good for you.

They can be prepared in many delicious ways and no matter how you prepare beans; they provide protein that is important for growing up healthy. Protein helps us have strong muscles.

Meat & Bean Group

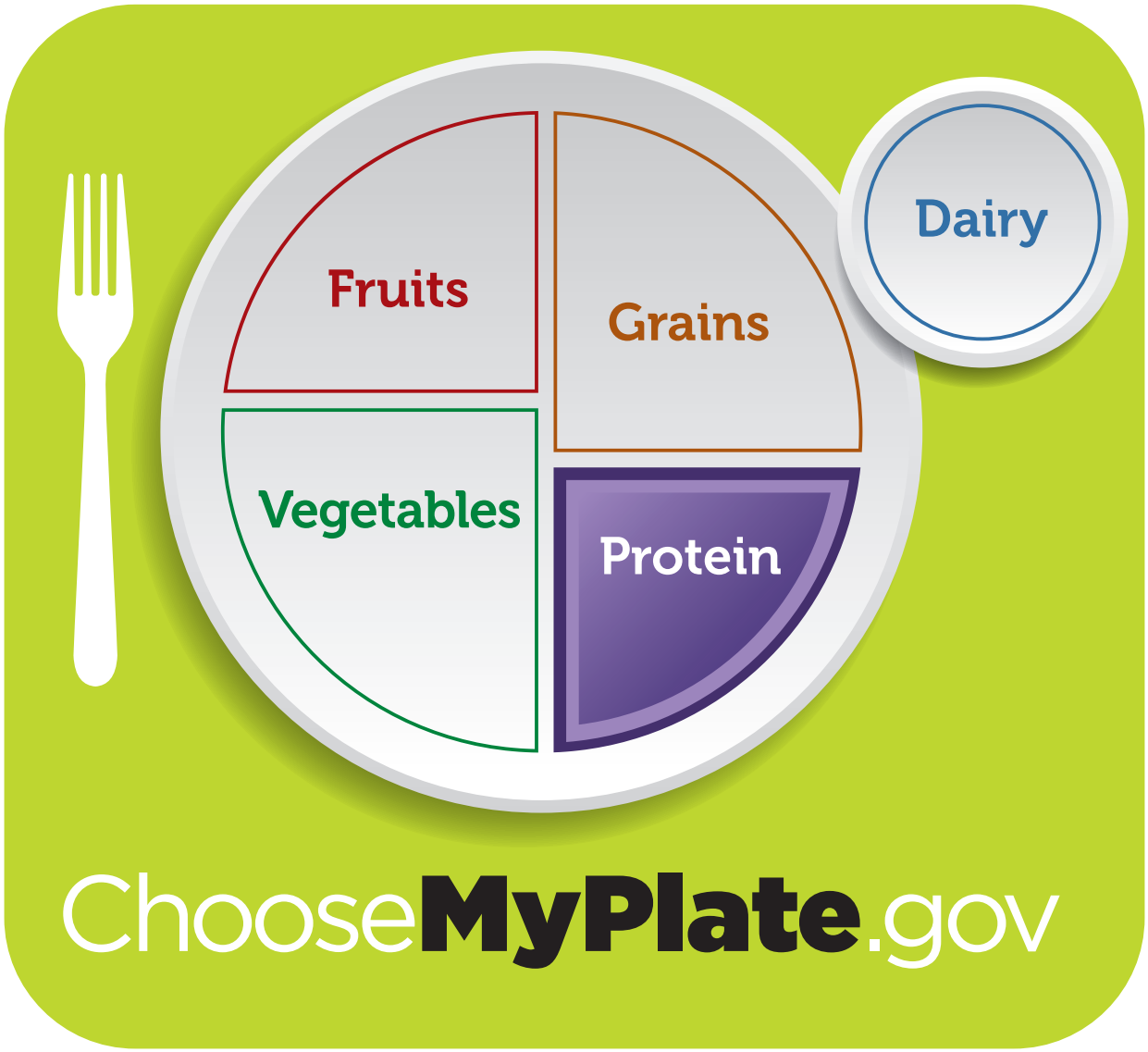
Go lean with protein

MyPyramid.gov

MyPlate

MyPlate is a new way to help us remember to eat a healthy and balanced plate of food. Beans are in the protein group.

Notice where they belong on MyPlate.



Most cultures around the world use beans as a staple food. That means they eat beans a lot! In different parts of the world, people season their beans with different spices and prepare beans in different ways. Does your family have a special way to prepare beans?

Today we are going to practice some math skills using beans.

We will be using 4 types of beans. But before we start on the math part, here is some information about the beans we will be using.

Black Beans

Black beans are popular in the Indian, Caribbean, and Central and South American cultures. Black beans are often used in soups, stews, chili—even in salads.

Garbanzo Beans

Garbanzo Beans are also known as Chickpeas. They are popular in India, the Middle East and Africa.

A common dish made with Garbanzo Beans is Falafel which is a fried patty sometimes served in pita bread. Another popular way to eat these beans is in hummus which is a dip for crackers or vegetables

Pinto Beans

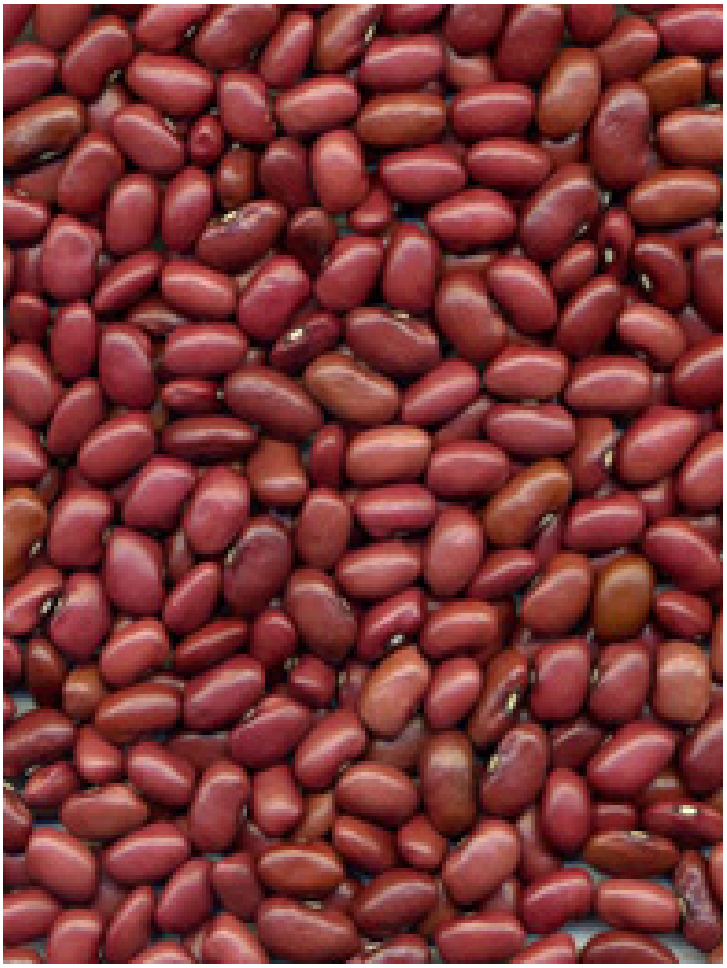
Pinto Beans are originally from Peru and are popular in South and Central America. They are commonly eaten in Mexico as well as many other parts of the world.

Pinto Beans are often eaten with tortillas or rice. They are also used in soups and many other recipes.

Kidney Beans

Like pinto beans, kidney beans are originally from Peru. They are popular in many countries around the world including Central and South America, Africa, India and China.

Red beans and rice is a very popular dish and most people have had Chili which is usually made with kidney beans.



Beans can be purchased canned or dried.

Today we are using dried beans for our math activities.

When you cook with dried beans, you need to soak them in water before they are cooked. Then they are boiled in water. One cup of dry beans makes about 3 cups of cooked beans. That is because beans expand (get larger) when they are cooked.

Let's start doing some math!!

In your table groups, calculate how many cups of cooked beans you could make with…

…2 cups dried beans

or

…6 cups dried beans

or

…10 cups dried beans

or

…100 cups dried beans

Math is very important when you are cooking. Whether you are cooking at home, or are a restaurant chef, you need to be able to measure ingredients accurately.

Measuring cups are a good way to think about fractions.