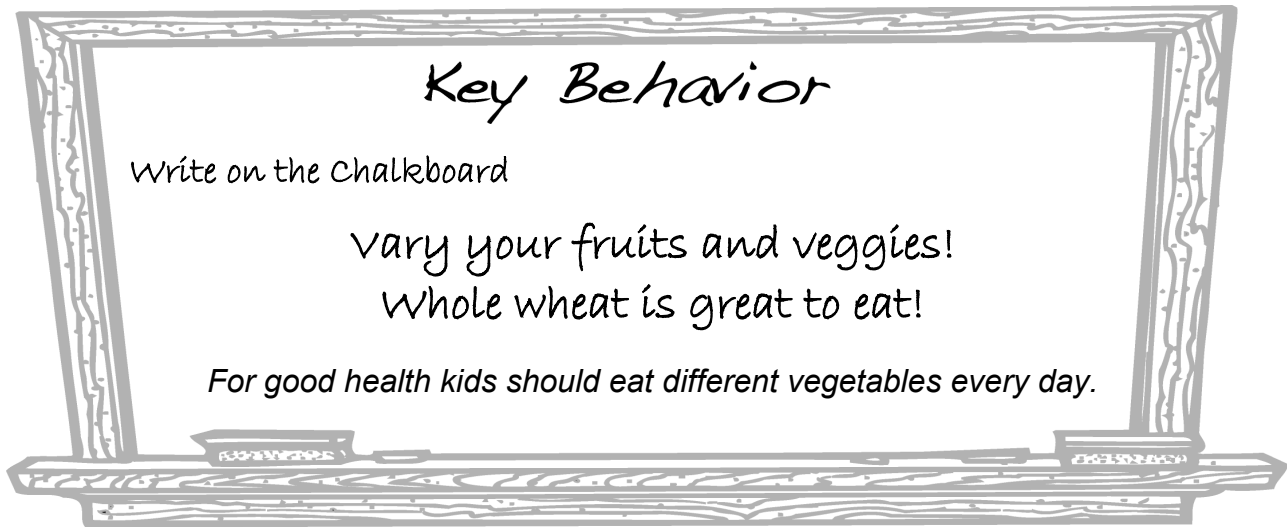


# Smashing Seeds! Hummus (3<sup>rd</sup> Grade)

*This is a longer lesson; it can be split into two parts and taught over two days.*



## NUTRITION OBJECTIVES CHECK LIST

Students will be able to:

- prepare** and **taste** hummus with whole wheat pita bread.
- express ways** they can **eat a variety of healthy vegetables**.
- explain** the **health benefits** of eating a variety of vegetables.
- identify** that garbanzo beans fit in both the vegetable & protein groups and whole wheat pita bread fits in the grain group of MyPlate.

## MATERIALS AND INGREDIENTS

Bins	Teacher Provides	Will be Delivered
<b><u>In Kitchen Bin</u></b> - cutting board - chef knife (teacher only) - 1 small bowl (for lemon) - can opener - measuring cups and spoons (teacher only) <b><u>In Paper Goods Bin</u></b> - small paper plates* napkins*	- "All About Seeds" text copies - activity sheet copies* - scissors - MyPlate poster	- 3 lemons - 2 packages pita bread (whole wheat) (1/6 per student) - 3 - 15 oz. garbanzo beans (chickpeas) canned - small salt packets* - small bottle olive oil - zipper sandwich bags* - family letters*

\*One per student

## EXPERIMENT MATERIALS

Bins	Teacher Provides	Will be Delivered
	- activity sheets copies* - markers	- 3-4 dried garbanzo beans* - sealable baggies* - paper towels*

\*One per student

## Reinforcing Colorado Comprehensive Health Standards

Third Grade, Standard 2. Physical and Personal Wellness.1. Apply knowledge and skills to engage in lifelong healthy eating.

While INEP nutrition lessons focus on the Colorado Comprehensive Health Standards, you will find you may utilize lessons to reinforce mathematics, physical education, reading, writing & communicating, science & social studies standards for your class.

### SET-UP

#### Copies:

- Make copies of text “All about Seeds” (each student), and activity sheets (each student). **Note:** Use video link below instead of text to or overhead device to read “All about Seeds” text with whole class.

#### Work area:

- Students work individually at their desks.
- Have nutrition table ready for lesson ingredients and materials.

#### Food-prep:

- Open cans of garbanzo beans; then drain and rinse.
- Put about 2 large spoonful of garbanzo beans into each student’s sandwich bag. (1 bag for each student)
- Add 1 teaspoon of olive oil to each sandwich bag. (teacher does)  
**Note:** If olive oil packets are delivered with the lesson for students to open and squeeze into baggy on their own make sure to demonstrate how to carefully open packet and squeeze into bag. Oil can stain clothes and fabrics.
- Cut 1 lemon wedges (1 piece per student) for students to squeeze into the bags.
- Have salt packets ready to pass out – 1 per students for them to add to bags.
- Have scissors ready to use for cutting off one of the bottom corners of the sandwich bags after students have made hummus in the bags.
- Cut pita bread into triangles to make enough pieces for the class. **Tip:** One pita bread can be cut into 6-8 pieces.
- Have small paper plates and napkins ready to pass out.

#### Experiment:

- Have garbanzo bean seeds, paper towels and zipper sandwich bags ready to pass out.
- Have permanent markers ready for students to write their name on their seed sprouting baggie.
- Optional: Have video “How Do Seeds Grow? Ready to show to class. This can be used instead of the text “All about Seeds”.  
<https://www.youtube.com/watch?v=tkFPyue5X3Q>

#### Other-prep:

- Hang MyPlate poster on the board.  
**Tip:** This is a long lesson and may work better if split into two parts.

## INTRODUCTION WITH STUDENTS

### Let's Wake Up Our Brains! Brain Boost Exercise!

#### Grow like a Seed!



Teacher calls out instructions. Students pretend they are seeds.

- ♥ Sit on the ground curled up like a seed in the dirt
- ♥ The seed gets water and grows bigger
- ♥ Your seed coat pops off!
- ♥ Stretch your feet out as your roots grow
- ♥ Reach your hands up as your stem/shoot grows
- ♥ Stand up on your tiptoes and grow towards the sun
- ♥ Stretch your arms up as high as they can go
- ♥ Wave your arms back and forth
- ♥ You are fully grown!
- ♥ You are so excited you run in place!

Now that our minds are ready to go, let's get started on our nutrition lesson.

- Ask students to tell you why they think plants are important. Write the answers on the board. (they give us oxygen, we eat them, they are beautiful)
- Tell students that plants are a main source of food for many living creatures, including us.
- Ask students to name the different parts of the plant (roots, stem, fruit, seeds, leaves). Write these words on the board.
- Circle the word seeds and tell students that today they are going to learn about how important seeds are to us and to plants.
- Ask students what they know about seeds.
  - ✓ Where can you find seeds?
  - ✓ What do you think a seed has inside?
  - ✓ Can you name foods that are made with seeds?
  - ✓ Have you planted any seeds before?
- Pass out "All about seeds" text to students or show on overhead and read together.  
**Or** show video "How Do Seeds Grow?"  
<https://www.youtube.com/watch?v=tkFPyue5X3Q>
- Show the MyPlate poster to students and ask students which food groups include seeds.

#### **Grains Group:**

- ✓ All the foods from the grains group (bread, cereal, rice, and pasta) are seeds **or** are made from seeds in the form of flour.
- ✓ Whole grain foods have the whole seed in them, such as whole wheat bread. Whole grains are the best grains to eat! Today's snack has whole grain bread.
- ✓ **These foods provide carbohydrates and give us energy.**

#### **Vegetable Group:**

- ✓ We also eat all sorts of seeds like corn, snap peas, snow peas, beans, edamame, and green peas, they fit in the vegetables group.
- ✓ **These vegetables provide vitamins and minerals we need every day.**

### Protein Group:

- ✓ Some beans (pinto, kidney, black, garbanzo) fit in the protein group as well as the vegetable group. They are high in protein and have vitamins, minerals, and fiber so they also fit in the vegetable group.
  - ✓ Seeds, such as sunflower seeds and nuts also fit in the protein group.
  - ✓ **These types of seeds are very good for you. They have protein for your muscles and vitamins, minerals and fiber.**
- Explain that seeds are very nutritious. Have students imagine how a new plant starts from a tiny seed. It must have something very rich (enough nutrients) inside so that the new plant can grow. If the seed can support the new sprout, it is not hard to imagine that the seed is nutritious for us too!
  - **Refer to the Key Behavior on the board and tell students that eating a variety of fruits and veggies means to eat different fruits and vegetables every day for their growing bodies. Whole grains are great to eat and made from seeds!**
  - Tell students that they are going to be botanists (plant scientists) who study about plants by sprouting beans (seeds) and then they will make and eat a hummus made with beans (seeds) and whole wheat pita bread (wheat seeds).
  - Explain that “*Smashing*” can mean to crush or mash something but it can also mean wonderful or excellent. Today’s students will learn all about *wonderful, amazing, smashing* seeds and also *smash* garbanzo beans (chickpea seeds) to make their own hummus, hence the name of the lesson “Smashing Seeds! Hummus”.

### PROCESS

- Step 1: Tell students that they are going to sprout bean seeds as an experiment. Discuss with students what they think a seed needs to grow (water, sun, soil, light, air, warmth). Tell students that they are going to use a sandwich bag and a wet paper towel to sprout bean seeds.
- Step 2: Pass out the “Bean Sprouting” activity sheet. Have students complete the steps for their experiment:
1. Gather materials: baggie, paper towel, bean seeds.
  2. Put their name on their bag.
  3. Put the materials together. (*Wet paper towel, wrap seeds, add to bag, and put in sunny place.*)
  4. Write/draw their predictions.
- Step 3: Pass out experiment materials and have students follow the steps that they wrote on their activity sheets. Plan to revisit the activity sheets and bean seeds in a week or so to see what happened and write/draw observations.
- Step 4: When students have finished the activity sheets, have them clean up their workspace and have them wash their hands with soap and warm water.
- Step 5: Go over recipe together with students. Ask students to tell you what seeds they are eating when they eat this snack. (Garbanzo beans and

wheat seeds) Remind students that today's snack is very healthy, easy to make, and delicious to eat.

- Step 6: Demonstrate how to make the hummus in a baggie.
1. Take baggie with garbanzo beans and oil and squeeze lemon juice and add salt packet contents into bag.
  2. Squeeze the air out of the bag and seal.
  3. Smash the beans and ingredients together in the bag.
  4. Cut tip of corner of bottom of bag off with scissors and squeeze the hummus onto the pita bread. Make sure zipper baggie is sealed tight.
  5. Taste and enjoy!
- Step 7: Pass out the ingredients, plates and napkins to students. And have them make and taste their own "Hummus in a Bag".
- Step 8: **Let's Eat, Let's Talk.** While students eat ask them what they learned. Help students organize their thoughts on how they can eat a variety of vegetables and choose whole wheat every day. Ask and discuss the questions in the box **Make Health Happen.**
- Step 11: Remind students to take their recipes home to share with their families.

*Make Health Happen*

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What did you like about the hummus?

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What does eating a variety of fruits and vegetables every day mean to you and how can you make that happen?

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Whole wheat pita bread fits in the grains group. How is pita bread made from seeds?

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## BACKGROUND INFORMATION

- Inside every seed lives a tiny baby plant or embryo. All seeds need water, oxygen, and proper temperature to germinate.
- The human diet includes many forms of seeds. The seeds we eat are grains, beans, peas, seeds, and nuts.
- Grains are the best sources of complex carbohydrates. Grains, especially whole grains, are also rich in soluble fiber (helps lower blood-cholesterol levels) and insoluble fiber (helps prevent constipation and protect against some forms of cancer). Whole grains also offer a significant amount of B vitamins (riboflavin, thiamin, and niacin), vitamin E, iron, zinc, calcium, selenium, and magnesium.
- Dried beans and peas are the best source of plant protein. Legumes are also rich in carbohydrates, B vitamins, zinc, potassium, magnesium, calcium, iron, and fiber. They are low in calories, cholesterol-free, fat-free, and inexpensive.
- Fresh beans and peas are considered vegetables and they offer some beta-carotene and vitamin C, which dry beans and peas don't have.
- Nuts and seeds are an excellent source of protein, fiber, and minerals. They are also high in fat. Most of the nuts and seeds contain unsaturated fat, which is believed to lower cholesterol levels in the blood.
- By eating a variety of fruits and vegetables, we can increase the likelihood of getting adequate amounts of vitamins, minerals, and fiber in addition to valuable phytochemicals. Eating a variety can help you stay healthy and maintain a healthy weight, a healthy heart, memory function, vision health, strong bones and teeth, and a lower risk of some cancers.

# All About Seeds

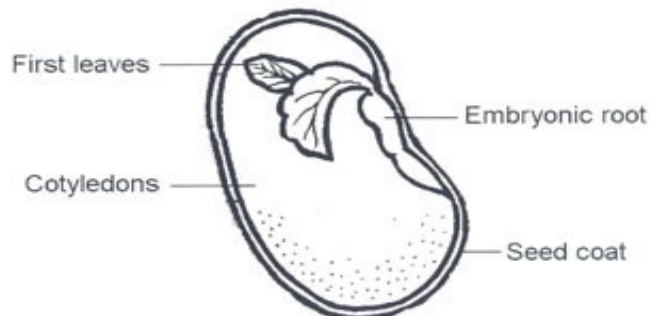
Seeds are an important part of our world. Seeds are everywhere and are part of every plant that grows. Seeds come in different sizes, shapes, and colors. Some are big and hard like coconuts and others are small and soft like sesame seeds on hamburger buns.

Did you know that seeds travel? The fluffy dandelion seeds float in the wind and can travel far away from the plant. Animals help seeds to travel, too. They eat fruit like berries and apples. The seeds inside the fruit go through their bodies undigested and are dropped on the ground as they move from one place to another. Also, some seeds have burrs. Have you ever walked through a field and gotten stickers on your socks? You were giving those seeds a free ride!

Seeds make new plants. Within every seed lives a tiny baby plant **embryo** which includes the **embryonic root** and the **first leaves**. The outer covering of a seed is called a **seed coat** and it protects the tiny plant inside. The seed also has food that is stored in the **cotyledons** for the baby plant to use until it grows leaves to make its own food.

Many of the foods we eat are seeds or have seeds inside them. All fruits have seeds inside them. Think of a watermelon or an apple! Can you name a vegetable that has seeds inside it? Cucumbers and tomatoes are vegetables with seeds inside them. We call them fruit-vegetables! The flour in bread, tortillas and crackers are made from wheat seeds. When we eat rice we are eating little rice seeds. The peanuts in peanut butter are seeds. Corn, beans and peas, are seeds we eat too.

Seeds are very healthy to eat because they provide carbohydrates for energy, protein for strong muscles, vitamins, minerals, fiber, and some fats, almost all the nutrients that our bodies need for growth in life!



## Datos sobre las Semillas

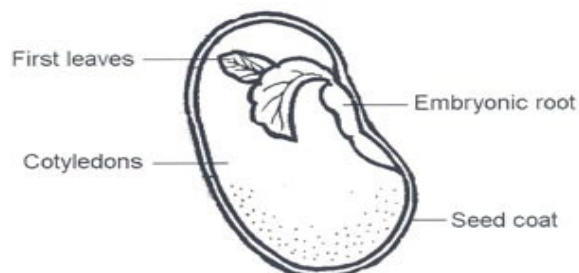
Las semillas son una parte importante de nuestro mundo. Las semillas se hallan en todas partes y son parte de cada planta que crece. Las semillas vienen en diferentes tamaños, formas y colores. Algunas son grandes y duras como el coco y otras son pequeñas y blandas como las semillas de ajonjolí (sésamo) en los panes para hamburguesas.

¿Sabías que las semillas viajan? Las semillas vellosas del amargón (diente de león) flotan en el viento y viajan lejos de la planta. Los pájaros y los animales también ayudan para que las semillas viajen. Ellos comen las frutas como y moras y manzanas. Las semillas que están adentro de la fruta pasan por el cuerpo de los animales ya que ellos no las digieren y se depositan en el suelo cuando se mueven de lugar a lugar. También algunas de las semillas tienen como espinitas (zurrónes espinosos). ¿Has caminado por el campo y ha agarrado espigas en tus calcetines? ¡Tú ayudaste a que las semillas viajen!

Las semillas hacen plantas nuevas. Adentro de cada semilla vive una planta bebé, o **embrión**, el cual está compuesto por la **raíz del embrión** y las **primeras hojas**. La parte exterior se llama **capa externa** y protege a la planta bebé que esta adentro. La semilla también tiene comida almacenada en los **cotiledones** de la planta bebé hasta que sus hojas crezcan y puede producir su propia comida.

Muchos de los alimentos que comemos son semillas o tienen semillas dentro de ellos. Todas las frutas tienen semillas dentro de ellas. ¡Piensa en la sandía o manzana! ¿Puedes nombrar un vegetal que tiene semillas dentro? Los pepinos y tomates son vegetales con semillas dentro de ellos. ¡Los llamamos frutas-vegetales! La harina en el pan, tortillas y galletas son hechas de semillas de trigo. Cuando comemos arroz, estamos comiendo semillitas de arroz. Los cacahuates (maníes) en la crema de cacahuates son semillas. El maíz, frijol y chicharos son semillas que comemos también.

Las semillas son muy nutritivas porque proveen carbohidratos para la energía, proteínas para músculos fuertes, vitaminas, minerales, fibra y algunas grasas ¡casi todos los nutrientes que necesita nuestro cuerpo para crecer en la vida!





# Bean Seed Experiment

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Steps for performing my bean seed experiment.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Draw your predictions. Label the parts of the plant.

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**STOP! LET YOUR BEAN SEEDS GROW FOR ONE WEEK.**

Draw your observations. Label the parts of the plant.

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# Mi Experimento de la Semilla de Frijol

Nombre: \_\_\_\_\_ Fecha: \_\_\_\_\_

Pasos para realizar el experimento de la semilla de frijol.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

Dibuja tus predicciones. Colócale el nombre a las partes de la planta.

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**¡PARA! DEJA QUE LAS SEMILLAS DE FRIJOL CREZCAN POR UNA SEMANA.**

Dibuja tus observaciones. Colócale el nombre

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# Bean Seed Experiment – Example Answer Sheet

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Steps for performing my bean seed experiment.

1. I will write my name on my plastic bag.
2. I will wrap my seeds in a wet paper towel.
3. I will put the seeds and wet towel in a plastic bag and close it.
4. I will put the bag in the window.

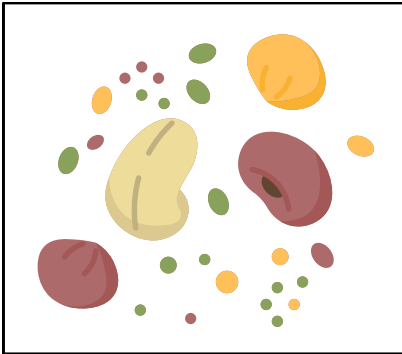
Draw your predictions. Label the parts of the plant.

--	--

STOP! LET YOUR BEAN SEEDS GROW FOR ONE WEEK.

Draw your observations. Label the parts of the plant.

--	--



Dear Families,

Today your student prepared a snack made out of different types of seeds: hummus made out of chickpeas (garbanzo beans), pita made from wheat seeds, and cucumbers that have seeds inside them. They also planted chickpea seeds and predicted what conditions are best for them to grow.

## Seed Smashing Hummus

Makes About: 8-10 servings

### Ingredients

- 2 tablespoons canned chickpeas (garbanzo beans)
- 1/8 lemon
- 1 teaspoon olive oil
- cucumber slices
- whole wheat crackers or pita bread

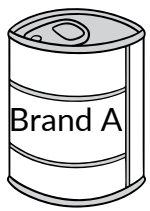
*\*Feel free to adjust ingredients depending on allergies and/or what you have at home.*

Total Recipe Cost: \$8.00 - \$11.00

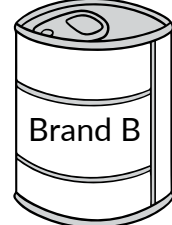
### Directions

1. Wash your hands.
2. Add chickpeas in a sandwich bag with a zipper seal.
3. Squeeze juice of 1/8 lemon into bag, and add olive oil.
4. Remove excess air from bag and seal well. Smash beans until smooth.
5. Snip off bottom corner of bag and squeeze hummus onto pita bread or whole wheat crackers.
6. Slice cucumbers and add on top of hummus.
7. Eat and enjoy!

Checking the **unit price** of a product is an easy way to save money at the grocery store. You can compare costs of similar items with varying sizes and brands by looking at the “unit price”. Unit price usually tells us the cost of something per ounce or pound. Find the unit price on the tag on the grocery store shelf.

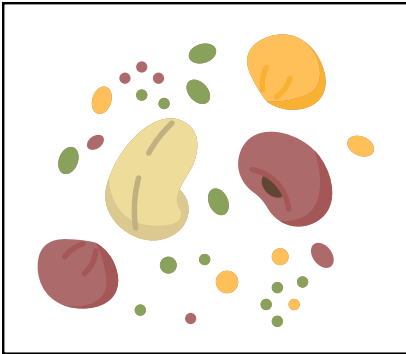


Brand A: Fat Free Refried Beans (16 oz.)	
Unit Price:	Total Price:
<b>\$0.08/oz</b>	\$1.29/ea



Brand B: Fat Free Refried Beans (30 oz.)	
Unit Price:	Total Price:
<b>\$0.06/oz</b>	\$1.99/ea

The lower the unit price, the lower the cost of the product. Brand A and Brand B are similar products but different sizes. Brand A is smaller (16 oz.) than Brand B (30 oz.). Brand A fat free refried beans are **MORE** expensive per unit because they cost **\$0.08/oz.** compared to Brand B fat free refried beans, which cost only **\$0.06/oz.** Buying in bulk is often a less expensive cost **per unit.**



Queridas familias

Hoy su estudiante preparó una merienda a base de diferentes tipos de semillas: hummus a base de garbanzos, pita a base de semillas de trigo y pepinos que tienen semillas en su interior. También plantaron semillas de garbanzos y predijeron qué condiciones son mejores para que crezcan.

## Hummus de semillas aplastada

Rinde aproximadamente: 8-10 porciones

Costo total de la receta: \$8.00 - \$11.00

### Ingredientes

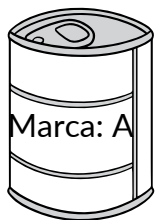
- 2 cucharadas de garbanzos enlatados.
- 1/8 de limón
- 1 cucharadita de aceite de oliva
- pepino en rodajas
- galletas integrales o pan de pita

*\*Siéntese libre de ajustar los ingredientes según las alergias y/o lo que tenga disponible en casa.*

### Direcciones

1. Lávese las manos.
2. Agregue los garbanzos en una bolsa para sándwich con cierre.
3. Exprima el jugo de 1/8 de limón en la bolsa y agregue aceite de oliva.
4. Retire el exceso de aire de la bolsa y séllela bien. Aplaste los garbanzos hasta que estén suaves.
5. Corte la esquina inferior de la bolsa y exprima el hummus sobre el pan de pita o galletas integrales.
6. Rebane los pepinos y agréguelos encima del hummus.
7. ¡Come y disfrute!

Verificar el precio **unitario de un producto** es una manera fácil de ahorrar dinero en el supermercado. Ud. puede comparar los costos de artículos similares con diferentes tamaños y marcas revisando el "precio unitario". El precio unitario generalmente nos dice el costo de algo por onza o libra. Encuentre el precio unitario en la etiqueta en el estante de la tienda de comestibles.



Marca A: Frijoles refritos sin grasa (16 oz.)

Precio unitario:	Precio total:
<b>\$0.08/onza</b>	\$1.29 c/u



Marca B: Frijoles refritos sin grasa (30 oz.)

Precio unitario:	Precio total:
<b>\$0.06/onza</b>	\$1.99 c/u

Cuanto menor sea el precio unitario, menor será el costo del producto. La marca A y la marca B son productos similares pero de diferentes tamaños. La marca A es más pequeña (16 oz.) que la marca B (30 oz.). Los frijoles refritos sin grasa marca A son **MÁS** caros por unidad porque cuestan **\$0.08/oz.** en comparación con los frijoles refritos sin grasa de la marca B, que cuestan solo **\$0.06/oz.** Comprar a granel es a menudo menos costoso por unidad.