LET'S LEARN ABOUT FLORIDA GREEN BEANS!

This Virtual Farm Field Trip unit is all about green beans. It begins with an informative 4.5-minute video, transporting students to R.C. Hatton Farms near Hobe Sound, Florida. Your students will meet farmers Charlie and Jonathan to learn how Florida green beans are planted, grown, harvested and distributed.

We encourage you to expand the learning experience using this section's worksheets and guided activities, including a taste test. You may choose to use all these resources or pick the ones best suited to your classroom.

ACCESS VIRTUAL FARM FIELD TRIP

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FarmToSchoolFL.com/FieldTrips

FLORIDA GREEN BEAN FUN FACTS

- **Green beans are part of the legume family, like black beans, lima beans and chickpeas.**
- **Green beans have vitamin C, which helps keep your body fueled, and fiber, which helps your body digest food.**
- **Green beans make a snap when you break them in half. That's why they're often called snap beans.**
- **Green beans used to be called "string beans" because some varieties had a tough string along the pod you had to pull off before eating. Farmers later created stringless beans, but the nickname stuck around.**
- **Some green beans climb up tall like a vine, and some grow on short, bushy plants.**
- **We eat green beans as a vegetable, but scientists consider them a fruit because they are the seed-holding pod of the plant. Open one up and you'll find tiny bean seeds tucked inside!**

BEFORE YOU WATCH: DISCUSSION STARTERS

Get students thinking about agriculture, science and nutrition by asking questions such as:

- *Where do the vegetables you eat come from and how do they reach your school?*
- *What do plants need to grow? What happens if they don't get what they need?*
- *Have you eaten green beans before — raw or cooked? What did you think?*
- *A green bean holds seeds inside. What other foods have seeds inside?*
- *As you watch this video, listen for how the farm uses water to help the beans grow.*

TRIVIA TOSS

Want to liven up your video trivia sheet exercise? Have students answer questions or complete their worksheets separately, then come together in teams to compare and finalize answers. Go around the room asking each team a question. If they answer it correctly, they get a chance to toss a ball into one of three buckets to get a prize for their team. Prizes might be a homework pass, free time, extra computer time or lunch in the classroom.

AFTER YOU WATCH: SUGGESTED QUESTIONS

Find video comprehension questions, answers and video timestamps for finding those answers below. See the worksheet section of these resources for a trivia sheet covering the questions below for more independent student work.

- *What are commodities?* ***(Crops grown and harvested on a farm; 0:26)***
- *Why do farmers build raised beds before planting green beans?* ***(To help keep seeds from getting drowned by too much water when it rains; 0:34)***
- *About how many green bean pods does a farmer hope to grow on each plant?* ***(About 20 pods per plant; 0:58)***
- *True or false: The little white flowers on a green bean plant can turn into bean pods.* ***(True; 1:05)***
- *Green beans are part of which plant family?* ***(Legume; 2:33)***

Teacher Tip: Ask students to name other foods in the legume family. Answers might include black beans, kidney beans, chickpeas and lentils.

- *How long does it take a tiny bean pod to grow into a full-sized pod?* ***(About 3 weeks; 1:18)***
- *What kind of effect helps water move through the soil to plant roots?* ***(Capillary effect; 2:08-2:26)***

Teacher Tip: Have students think of other resources that plants need to make their own food besides water.

- *True or false: Green beans are a good source of vitamin C and fiber.* ***(True; 3:37)***

GEOGRAPHY MOMENT

Ask students to find Hobe Sound on a map of Florida. (Hint: It's on the southeastern coast, east of Lake Okeechobee and about 35 miles north of West Palm Beach.)

USING THESE TEACHING TOOLS

Below is an overview and guide for using the teaching tools included in this section, including guided activities, recipes and worksheets. We've included the education standards each tool complements, materials needed for each activity, a brief overview of each tool and tips for building your lessons.

You can find each of these tools on the following pages, along with additional information and pointers.

GUIDED ACTIVITIES

TOOL	COMPLEMENTARY STANDARDS	MATERIALS NEEDED	ABOUT THIS TOOL	TEACHER TIPS
Video, Discussion Questions and Trivia Toss (in Classroom Guide) *On page 157*	Standard(s) Supported: SC.2.L.16.1, SC.3.L.14.1, SC.3.L.17.2, HE.2.PHC.1.1, HE.3.PHC.3.2	- 3 buckets, boxes or similar containers - Palm-sized balls (enough for each team to have one)	This activity gets students out of their seats as they respond to questions about the Virtual Farm Field Trip video.	Use this activity to complement or reinforce the Green Bean Video Trivia sheet.
Green Beans Three Ways *On page 163*	Standard(s) Supported: SC.2.P.9.1, SC.3.P.8.3, SC.2.N.1.5, HE.2.PHC.1.1, HE.3.PHC.3.2	- Raw green beans in the pod - Freshly steamed green beans (see Quick Steam Green Beans Recipe) - Quick-pickled "dilly" beans (see Dilly Beans Recipe)	In this activity, you'll guide students through tasting green beans three ways – fresh in the pod, steamed and quickly pickled.	Start by asking your school nutrition team if they can support you by acquiring and/or preparing the food items. Use this activity to introduce students to new, nutritious foods. Educate them on the nutritional differences between whole foods – like fresh green beans – and packaged foods with long ingredient lists – like frozen, breaded green beans.

TOOL	COMPLEMENTARY STANDARDS	MATERIALS NEEDED	ABOUT THIS TOOL	TEACHER TIPS
Recipe: Quick Steam Green Beans *On page 165*	Standard(s) Supported: SC.2.P.9.1, SC.3.P.8.3	- Large microwave-safe bowl - Microwave-safe plate or lid - Tongs - Measuring spoons - Bowls or cups to serve · Small microwave-safe bowl (optional, for customizing). - Adjust quantities based on class size: 1 pound fresh green beans, washed with ends trimmed - 2 tablespoons water	Use this recipe to prepare the steamed green beans for the Green Beans Three Ways exercise.	You handle the microwave and the hot bowl. Students can trim the ends and time the cooking, then compare the color and texture of the steamed beans with the raw ones as a short observation exercise.
Recipe: Dilly Beans *On page 166*	Standard(s) Supported: SC.2.P.9.1, SC.3.P.8.3	Equipment needed: - 1 quart-sized mason jar with lid - Measuring cup - Spoon to stir - Kid-safe scissors - Small saucepan - Heat source, such as a stovetop, hot plate or classroom-approved cooking appliance (for teacher use only). Materials and ingredients (adjust quantities based on class size): - 1 pound green beans, washed and trimmed to fit the jar standing upright - 1 cup white vinegar - 1 cup water - 1 tablespoon kosher salt - 3 cloves garlic, cut in half - 2 tablespoons fresh dill - 2 tablespoons sugar (optional)	Use this recipe to prepare the quick-pickled “dilly” beans for the Green Beans Three Ways exercise.	Students can wash and pack the beans and measure the vinegar, water, salt and sugar while you heat the brine and pour the hot liquid. Have students predict how the flavor, smell and texture will change during pickling, then compare fresh and pickled beans after tasting.

TOOL	COMPLEMENTARY STANDARDS	MATERIALS NEEDED	ABOUT THIS TOOL	TEACHER TIPS
Germinate a Bean in a Bag (Teacher Guide and Observation Log) *On page 167*	Standard(s) Supported: MA.2.M.1.1, MA.2.M.1.2, MA.2.M.1.3, MA.3.M.1.2, SC.2.L.16.1, SC.2.N.1.5, SC.3.L.14.2, SC.3.L.14.1	- 1 resealable sandwich-size plastic bag per student - 1 paper towel per student - 2–3 dried green bean seeds per student - Water - Water dropper, or another small instrument for adding water as needed - Tape - A ruler (centimeters) for measuring - A sunny window with space for the whole class's bags - Magnifying glasses (optional)	Each student germinates bean seeds against a damp paper towel in a plastic bag taped to a sunny window, then records the date, a drawing and the root and shoot lengths in centimeters in the Observation Log.	This activity complements life science lessons on life cycles and math lessons on measurement. Start early in the week so there is visible change by Friday, and remind students to write "0" in the log for any part that has not started growing yet.
Bean Pod Dissection (Teacher Guide) *On page 170*	Standard(s) Supported: SC.3.L.14.1, SC.2.P.8.1, SC.2.L.16.1	- 1–2 fresh green bean pods per student or pair - A paper plate or napkin to work on - A ruler (centimeters) - A pencil and crayons for sketching - A magnifying glass (optional)	Students open a fresh green bean pod, predict and count the seeds inside, measure and sketch what they find, and discover that the pod is the plant's seed holder — which is why scientists classify a green bean as a fruit.	Fresh, plump pods open most easily and have the most developed seeds inside. Have students wash their hands and rinse the pods first, and keep this batch for science while using separate, clean beans for tasting. Make a class tally of how many seeds each pod held to turn everyone's observations into shared data.

WORKSHEETS

TOOL	COMPLEMENTARY STANDARDS	MATERIALS NEEDED	ABOUT THIS TOOL	TEACHER TIPS
Green Bean Video Trivia and Farm Math *On page 172*	Standard(s) Supported: MA.2.AR.1.1 / MA.3.AR.1.2	- Writing instrument	This worksheet tests students' comprehension of the Virtual Farm Field Trip by asking questions answered in the video, then applies farm facts to word problems.	You might hand the worksheet out before the video so students can answer as they go, or wait until after. Consider enhancing this activity with the "Trivia Toss" activity, explained in this Classroom Guide under "After You Watch."

TOOL	COMPLEMENTARY STANDARDS	MATERIALS NEEDED	ABOUT THIS TOOL	TEACHER TIPS
On the Green Bean Farm *On page 174*	Standard(s) Supported: ELA.2.C.3.1, ELA.2.C.1.2, ELA.2.R.3.2, ELA.3.C.3.1, ELA.3.R.3.2	- Writing instrument - Crayons, colored pencils or markers	This worksheet asks students to draw a scene from the R.C. Hatton Farms field trip, then write two to three sentences describing the drawing and including at least one fact from the video.	This tool reinforces comprehension, encourages observation skills and allows students to express their understanding creatively. You might ask students to each share with the class what they drew and wrote.
Parts of a Green Bean Plant *On page 175*	Standard(s) Supported: SC.3.L.14.1, SC.3.L.17.2	- Writing instrument - Crayons, colored pencils or markers (optional)	This worksheet has students (1) label parts of the green bean plant using a word bank, then (2) match each part of the plant with a description of its function.	This worksheet complements life science lessons about parts of the plant. It also touches on photosynthesis, so it works either as reinforcement or as an introduction.
Life Cycle of a Green Bean *On page 176*	Standard(s) Supported: SC.2.L.16.1	- Writing instrument	This worksheet invites students to use a word bank to label each stage of the green bean plant's life cycle in the box next to each picture.	This worksheet complements life science lessons about plant life cycles. It also pairs well with Germinate a Bean in a Bag, where students watch the first two stages happen in real time.
Reading Comprehension: The Story of R.C. Hatton, with Write About It *On page 177*	Standard(s) Supported: ELA.2.R.3.2 / ELA.3.R.3.2, SC.3.L.14.1, HE.3.CH.4.1	- Writing instrument	This worksheet pairs a short passage about the history of R.C. Hatton Farms and how green beans are grown with comprehension questions, a word match and a sequencing exercise numbering six events from 1 to 6.	This worksheet complements reading comprehension and vocabulary lessons. It gives students a second route into the content of the Virtual Farm Field Trip, which helps those who take more from reading than from watching. You might read the passage aloud together first, then have students answer independently.
Answer Key *On page 179*			See here for answers to each worksheet.	

GREEN BEANS THREE WAYS

This group activity brings the field trip to life as students get the opportunity to taste green beans three ways: fresh in the pod, steamed and quickly pickled.

MATERIALS

Raw green beans in the pod

Freshly steamed green beans *(see recipe on following pages)*

Quick-pickled "dilly" beans *(see recipe on following pages)*

COLLABORATE WITH YOUR CAFETERIA

Consider partnering with your school nutrition team to obtain these food items and/or prepare a green-bean-themed dish for your taste test. Be sure to contact them ahead of time, discuss the support you will need and show gratitude for their collaboration!

SUGGESTED QUESTIONS

Lead a discussion as your students try green beans three different ways. Questions like the following can help kids better connect with their food, think about their preferences and encourage them to make nutritious choices in the future.

Before the tasting:

- *Have you tried green beans before? What did you think?*
- *If not, what do you think they will taste like?*
- *Did you know that you can pickle green beans? Do you know what that means? How do you think pickling might change the green beans' texture or flavor?*

  Teacher Note: Pickling is a way of preserving food by soaking it in a salty or vinegar-based liquid, which can change its flavor and texture.

As they try the fresh green beans:

- *As you bit into the raw green bean, what did you hear? What did it feel like?*
- *Do you like the smell of the fresh green beans? How would you describe it?*
- *Describe the flavor. Is it like green beans you've tasted before? If yes, how so? If not, how is it different?*
- *How would you feel about eating fresh green beans as a snack? Why? What might you eat them with?*

As they try the steamed green beans:

- *How is the warm steamed green bean different from the cold, raw one? Does cooking change the way it tastes?*
- *What do you notice about the texture? Is the steamed bean softer or crunchier than the raw one?*
- *What do you notice about the color of the steamed green beans compared to the fresh ones? Is it brighter or darker?*
- *How do you feel after eating the steamed green beans? Would you like to try them again?*

As they try the pickled "dilly" beans:

- *Have you had regular pickles before? If so, how are the pickled green beans different from or similar to pickled cucumbers?*
- *How does the flavor of the dilly beans compare to the flavor of the fresh green beans? Is it saltier or more sour?*
- *Would you enjoy having dilly beans as a snack? Why or why not?*
- *Before today, did you know that you could change the taste and texture of vegetables by pickling them yourself? What other vegetables would you like to try pickling?*

TEACHER TIP:

Use this as a quick nutrition lesson. Explain that whole foods with just one ingredient — like fresh green beans — are usually more nutritious than packaged foods with a long list of ingredients.

A food with lots of ingredients — like a frozen package of crispy breaded green beans — is like a puzzle with many pieces, and some pieces might not be so nutritious (like lots of sodium). Simple foods you recognize are better for your body and help you feel your best.

Encourage students to count how many ingredients there are in these frozen breaded green beans. Then you may point out the amount of sodium and saturated fat in one serving. Encourage students to compare this to fresh green beans. There isn't an ingredient list — because it's just green beans!

FROZEN CRISPY BREADED GREEN BEANS

Nutrition Facts

About 4 Servings Per Container

Serving size 3 oz (84g/about 24 pieces)

Amount per serving

Calories 210

	% Daily Value*
Total Fat 11g	14%
Saturated Fat 2g	10%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 410mg	18%
Total Carbohydrate 23g	8%
Dietary Fiber 4g	14%
Total Sugars 1g	
Includes 0g Added Sugars	0%
Protein 3g	
Vitamin D 0mcg	0%
Calcium 30mg	2%
Iron 0.7mg	4%
Potassium 170mg	4%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: GREEN BEANS, WHEAT FLOUR, SOYBEAN OIL, WATER, CONTAINS LESS THAN 2% OF: RICE FLOUR, SALT, MODIFIED CORN STARCH, FLAXSEED, SUGAR, LEAVENING (SODIUM ACID PYROPHOSPHATE, SODIUM BICARBONATE, MONOCALCIUM PHOSPHATE), YEAST EXTRACT, DEXTROSE, GARLIC POWDER, ONION POWDER, PAPRIKA EXTRACT (COLOR), SPICE, YEAST.

CONTAINS: WHEAT.

QUICK STEAM GREEN BEANS RECIPE

Estimated Yield: 1 pound green beans (~6 small servings)

EQUIPMENT REQUIRED

- Large microwave-safe bowl
- Microwave-safe plate or lid
- Tongs
- Measuring spoons
- Bowls or cups to serve
- Small microwave-safe bowl (optional, for customizing)

MATERIALS AND INGREDIENTS

Adjust quantities based on class size.

- 1 pound fresh green beans, washed with ends trimmed
- 2 tablespoons water

DIRECTIONS

1. Add the green beans and water to the large microwave-safe bowl and cover with the microwave-safe plate or lid.
2. Microwave on high, checking at the halfway point, for 4–6 minutes, or until the beans are bright green and just tender when pierced with a fork. Time may vary.
3. Carefully uncover the beans (watch for steam) and drain any excess water.
4. Serve warm in cups or bowls.

CUSTOMIZE YOUR BEANS

For a more exciting flavor, melt 1 tablespoon butter or olive oil with 1 minced garlic clove (or ¼ teaspoon garlic powder) in the small microwave-safe bowl, microwaving in short bursts until just melted and fragrant. Pour over the drained beans, season with a pinch of black pepper and toss to coat.

You can also finish the beans with a squeeze of lemon juice or a sprinkle of grated Parmesan cheese.

DILLY BEANS RECIPE

Estimated Yield: 1 quart dilly beans

This activity can be completed as a teacher demonstration or in small groups with teacher assistance.

Students can help wash and pack the green beans, measure ingredients and observe the pickling process, while the teacher handles heating the brine — the mixture of water, vinegar and salt used to pickle and preserve foods — and pouring the hot liquid into the jars.

TEACHER NOTE:

Pickled green beans are often called "dilly beans" because they're pickled with dill, a leafy herb that gives them a tangy, savory flavor.

EQUIPMENT REQUIRED

- 1 quart-sized mason jar with lid
- Measuring cup
- Spoon to stir
- Kid-safe scissors
- Small saucepan
- Heat source, such as a stovetop, hot plate or classroom-approved cooking appliance (for teacher use only)

MATERIALS AND INGREDIENTS

Adjust quantities based on class size.

- 1 pound green beans, washed and trimmed to fit the jar standing upright
- 1 cup white vinegar
- 1 cup water
- 1 tablespoon kosher salt
- 3 cloves garlic, cut in half
- 2 tablespoons fresh dill
- 2 tablespoons sugar (optional)

DIRECTIONS

1. **Students:** Wash the green beans and trim them so they fit inside the jar. Pack the beans upright in the jar with the garlic and dill.
   a. **Tip:** Any beans that don't fit in the jar make a great raw snack — enjoy them fresh!
2. **Students:** Measure the vinegar, water, salt and sugar (if using) into a saucepan.
3. **Teacher:** Heat the mixture on a stovetop until it comes to a gentle boil, stirring until the salt and sugar dissolve.
4. **Teacher:** Carefully remove the brine from the heat and allow it to cool for 2–3 minutes.
5. **Teacher (or older students with close supervision):** Pour the warm brine into the jar until the green beans are completely covered.
6. **Students:** Secure the lid and gently shake the jar to combine the ingredients.
7. Place the jar in the refrigerator and let the beans pickle for at least 2 days before tasting.
8. Store refrigerated and enjoy within about 2 months.

CUSTOMIZE YOUR BEANS

For a spicy punch, add ¼ teaspoon red pepper flakes and ¼ teaspoon whole black peppercorns. Or try swapping half the white vinegar for red wine vinegar.

TEACHER TIP: Have students predict how the green beans' flavor, smell and texture might change during pickling. After tasting, compare the fresh and pickled beans and discuss the differences.

GERMINATE A BEAN IN A BAG

TEACHER GUIDE

In this activity, each student tucks a bean seed and a damp paper towel inside a plastic bag and tapes it to a sunny window. Over the next week or two, students observe something amazing happen: With no soil at all, a little root grows down, and a green shoot — the first stem and leaves of the new plant — grows up.

It's a hands-on way for students to observe germination, the process by which a seed sprouts and begins to grow into a new plant. They'll discover what seeds need to grow by practicing careful observation over time.

WHAT YOU'LL NEED (PER STUDENT):

- **1 resealable sandwich-size plastic bag**
- **1 paper towel**
- **2–3 dried green bean seeds**
- **Water**
- **Water dropper, or another small instrument for adding water as needed**
- **Tape**
- **A ruler (centimeters) for measuring**
- **A sunny window with space for the whole class's bags**
- **Magnifying glasses for a closer look (optional)**

HOW TO SET IT UP:

1. Dampen a paper towel with water so it is wet but not dripping, then fold it to fit inside the plastic bag.
2. Have each student place 2–3 bean seeds against the paper towel, near the top of the bag so the seeds are easy to see.
3. Seal each bag (leaving a little air inside) and tape it to a sunny window, with the seeds facing into the room.
4. Check the beans each day. Keep the paper towel damp, adding a few drops of water if it starts to dry out.
5. Over the next 1–2 weeks, watch as a root grows down and a shoot grows up. Record each observation in the Observation Log.

OBSERVE AND DISCUSS:

- Before we start: What do you predict will happen to the bean inside the bag?
- What changes did you notice first? What happened next? *(Possible observations: The seed swelled, the seed coat cracked, a root appeared, a shoot began growing upward.)*
- Which way does the root grow — up or down? Which way does the shoot grow? Why do you think each one grows that way? *(Roots help the plant take in water and nutrients. The shoot will grow into the stem and leaves. The leaves will use sunlight, air and water to make the plant's food.)*
- Notice how we never poured water directly on the seed. How does the water get from the paper towel to the bean? *(The paper towel holds water against the seed, allowing the seed to absorb the moisture it needs to begin growing.)*
- Our bean is growing without soil. Do you think it could keep growing in the bag forever? Why or why not? *(As the bean grows, it uses food stored inside the seed. Eventually, it will need more nutrients and space to continue growing, which plants often get from soil.)*

TEACHER TIP: CONNECT IT TO THE FARM

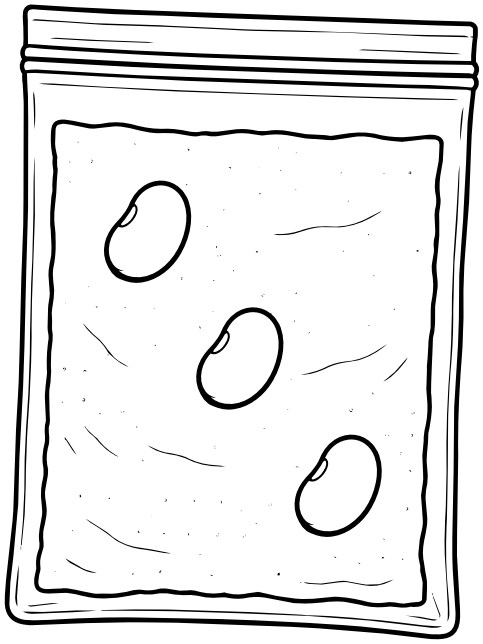
The damp paper towel delivers water to the seed through capillary action, the same effect the farmers describe in the video (2:08). They compare it to a napkin dipped in a cup of water. After a while, the water climbs up the napkin, even against gravity. At R.C. Hatton Farms, water moves through the soil in a similar way, traveling from canals to the bean roots. In this activity, the wet paper towel acts like a tiny version of the farm's irrigation system, providing the moisture the seed needs to begin growing.

TEACHER TIPS:

- Plant 2–3 seeds in each bag so every student is likely to get at least one sprout to watch.
- Start the activity early in the week so there is visible change by the end of the week.
- No soil means the root and shoot are easy to see — a great, mess-free way to watch a seed come to life.
- Keep the paper towel damp but not soaked; a bag that is too wet can cause the seeds to rot instead of sprout.

Name _____ **Date** _____

Germinate a Bean in a Bag: Observation Log



Directions: Check your bean every day. Each time, write the date and use your ruler to measure the root and the shoot in centimeters. If a part hasn't started growing yet, write "0."

My Prediction:

What do you think will happen to your bean?

_____

_____

_____

Date	Root length (cm)	Shoot length (cm)

Look back at your log:

- On your first day of measuring, how long was the root? _____ cm. The shoot? _____ cm.
- On your last day of measuring, how long was the root? _____ cm. The shoot? _____ cm.
- How much did the root grow from the first day to the last day? _____ cm. The shoot? _____ cm.
- Write one sentence describing how your bean changed from the first day to the last day.

_____

_____

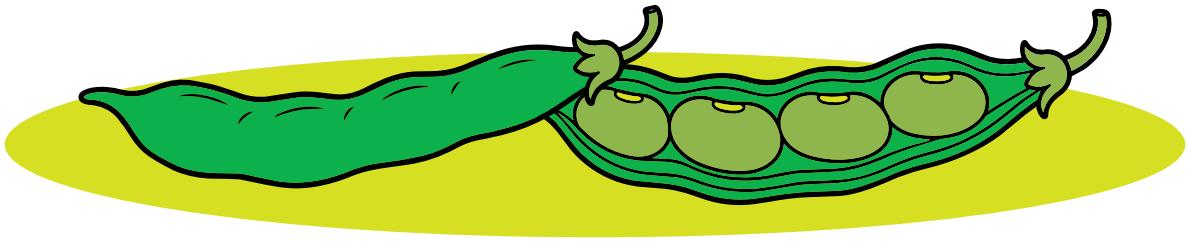
BEAN POD DISSECTION

TEACHER GUIDE

In this activity, students will explore the inside of a green bean pod and discover that it serves as the plant's seed holder. Because the pod contains seeds, scientists classify a green bean as a fruit.

Students will open a fresh green bean pod, find and count the seeds inside, observe and measure what they see, and explore how the pod protects seeds that can grow into new plants.

OUR QUESTION: ***What is inside a green bean pod, and why is it there?***



WHAT YOU'LL NEED (PER STUDENT OR PAIR):

- **1–2 fresh green bean pods**
- **A paper plate or napkin to work on**
- **A ruler (centimeters)**
- **A pencil and crayons for sketching**
- **A magnifying glass for a closer look (optional)**

WHAT TO DO:

1. Look at your whole pod. Notice its color, shape and texture. Measure how long it is in centimeters.
2. Predict how many seeds you think are hiding inside. Say or write your guess.
3. Snap off the stem end first, then gently open the pod along its seam — the little line running down the side — using your fingers.
4. Look inside and find the row of little seeds. Those are the beans!
5. Count how many seeds are in your pod. Was your prediction close?
6. Look closely at one seed. What color and shape is it? How big is it?
7. Optional: Use a magnifying glass for an even closer look. What do you notice now that you didn't before?
8. Sketch the open pod and the seeds inside, then label the pod and the seeds.

TALK ABOUT IT:

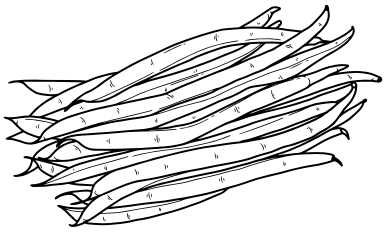
- Usually, the part of the green bean we eat is the whole pod. So, what are the little beans inside? *(The seeds.)*
- Why do you think the pod grows around the seeds? What might it do for them? *(The pod protects the seeds. It's the plant's seed holder.)*
- What could happen to one of these seeds if you planted it? *(It could grow into a whole new green bean plant. The seed is the start of the life cycle of a green bean.)*
- Did everyone's pod have the same number of seeds? Why might some pods have more than others? *(No. Each plant grows a little differently. The size of the pod, growing conditions and how well the flower was pollinated can all affect how many seeds develop inside.)*
- Where else have you seen seeds inside a food you eat? *(Examples may include cucumbers, blueberries, tomatoes, peppers, watermelons, pumpkins, apples, oranges or other fruits and vegetables with seeds. Remind students that many foods we eat contain seeds because they are part of a plant's life cycle.)*

TEACHER TIPS:

- Fresh, plump pods open most easily and have the most developed seeds inside.
- Have students wash their hands and rinse the pods first. Keep this batch for science, and use separate, clean beans for tasting!
- Make a class tally of how many seeds each pod held. Which number came up most often? This turns everyone's observations into shared data to compare.
- Extend the activity with other foods from the field trips, like strawberries and cucumbers, and compare how each plant stores its seeds differently.

Name _____ **Date** _____

Green Bean Video Trivia & Farm Math



Directions: Answer these trivia questions based on the video you watched about the Florida green bean farm.

1. How many days does it take for green beans to be ready to harvest? _____

2. What plant family are green beans part of? _____

   Bonus: Name two other foods in that family. _____

3. What happens to the green beans on the "bean line" before they are packaged? _____

   _____

Circle whether the statements below are true or false.

4. Green beans are also called string beans or snap beans.	**TRUE** | **FALSE**
5. Green beans grow underground like potatoes.	**TRUE** | **FALSE**
6. The capillary effect can pull water upward, against gravity.	**TRUE** | **FALSE**
7. Farmers rely only on rain straight from the sky to water green bean crops.	**TRUE** | **FALSE**

Choose the correct word from the word bank to fill each blank.

Word Bank: **irrigate · vitamin C · bed**

8. Farmers build a _____ of raised soil for each row, so the seeds don't get drowned by rain.

9. Culverts, canals and ditches are used to move water and _____ the farm.

10. Green beans are a good source of fiber and _____.

Continued →

Farm Math

Solve each problem and write your answer in the space provided.

1. A farmer harvested 45 bushels of green beans on Monday. On Tuesday, he picked 38 more bushels. How many bushels did he pick in all?

_____ bushels

2. One bushel of green beans weighs about 28 pounds. If a farmer had 50 pounds of beans in the truck but emptied out one bushel to be washed, how many pounds of beans would be in the truck now?

_____ pounds

3. One green bean plant grew 20 pods. Another plant grew only 14 pods. How many more pods does the first plant have than the second plant?

_____ pods

Bonus: Farmer Charlie picks 3 bushels of green beans. Remember that each bushel of beans weighs about 28 pounds. He delivers 75 pounds of the beans to school cafeterias. How many pounds of green beans does Farmer Charlie have left?

_____ pounds

Name _____ **Date** _____

On the Green Bean Farm

Directions: In the space below, draw a scene from the R.C. Hatton Farms field trip.

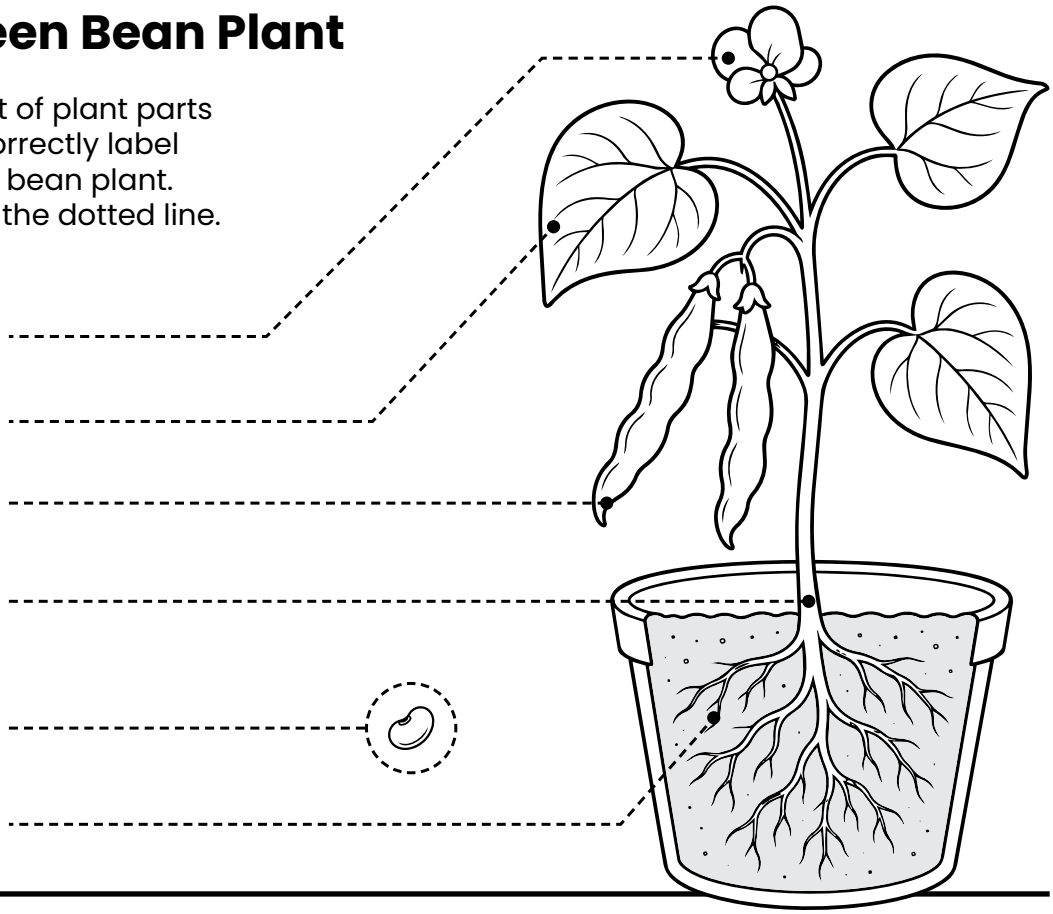
Write 2-3 sentences describing your drawing. Be sure to include at least one fact you learned from the video.

Name _____ **Date** _____

Parts of a Green Bean Plant

Directions: Use the list of plant parts in the word bank to correctly label the parts of the green bean plant. Write the word above the dotted line.

Word Bank
Root
Stem
Leaf
Flower
Pod
Seed



Now draw a line between each part of the plant and its function.

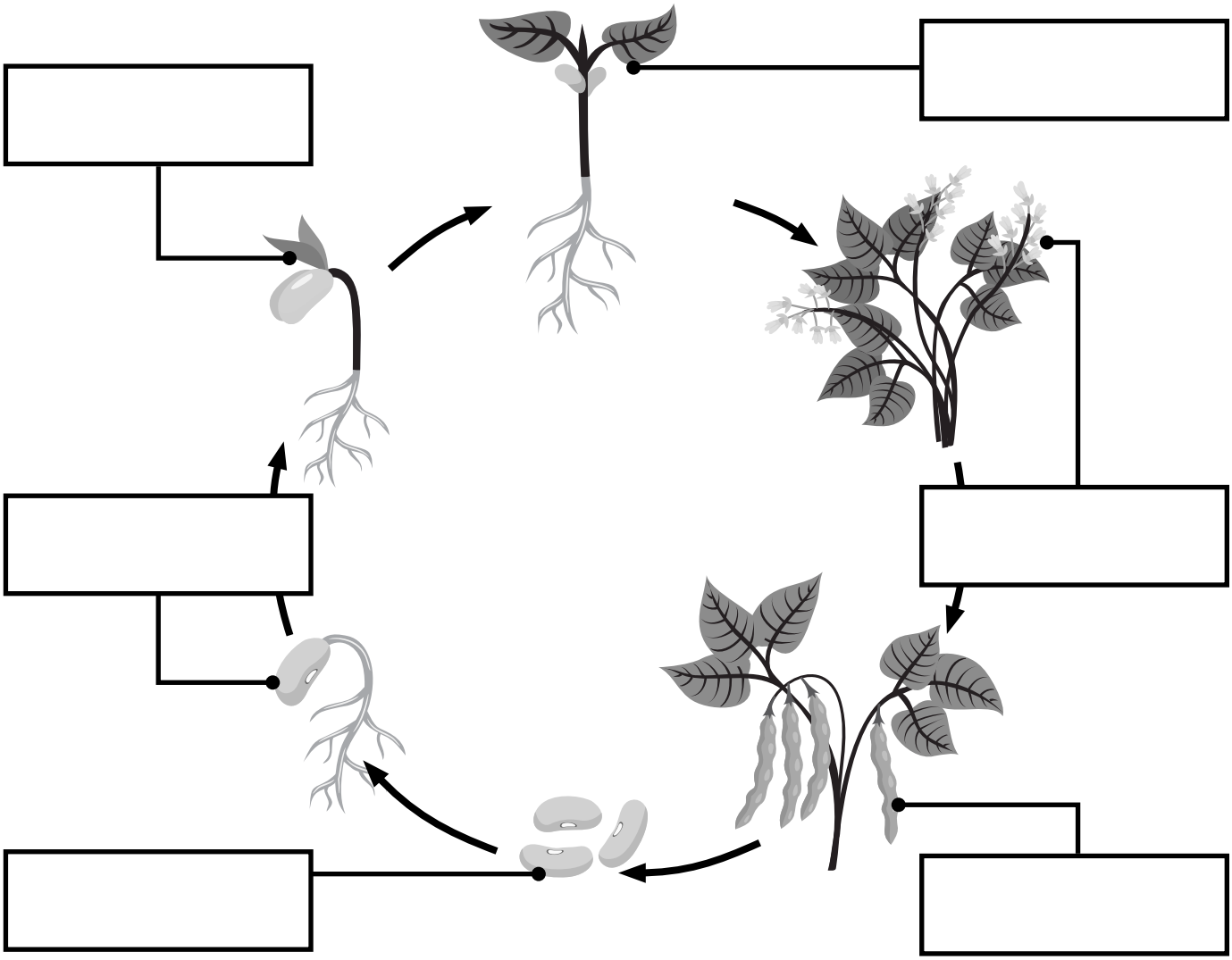
Root
Stem
Leaf
Flower
Pod
Seed

The plant's "fruit" that holds the seeds
Absorbs sunlight to produce energy for the plant through photosynthesis
Absorbs water and nutrients from the soil
Distributes food and water throughout the plant
The part of a plant that produces seeds
Contains a baby plant that can grow into a new plant

Name _____ **Date** _____

Life Cycle of a Green Bean

Directions: Cut out the words from the word bank and glue them where they belong to label each stage of the green bean plant's life cycle.



Flowering plant	**Seeds (beans)**	**Seedling**
Sprout	**Germination**	**Bean pod**

Name _____ **Date** _____

The Story of R.C. Hatton

Directions: Read the passage about R.C. Hatton Farms. Then, answer the questions.

In 1932, a man named Robert C. Hatton planted his first seeds in Florida. Those seeds grew into R.C. Hatton Farms. Over time, the farm got bigger and bigger, and today, it takes up 12,000 acres! The farm also grows food in South Georgia. The Hatton family has run the farm for many years, passing it down from parents to children. Robert C. Hatton is gone, but his farm lives on.

Today, the farm grows sugarcane and vegetables in Florida. One of its vegetables is the green bean. Green beans belong to the legume family, just like black beans and peas.

Growing green beans takes planning and patience. First, farmers build raised beds of soil where the seeds can grow. Next, the plants need water. Farmers use ditches and canals to irrigate the fields. To irrigate means to bring water to the plants. The water moves through the soil and soaks up through the roots in a process called the capillary effect.

Green beans take about 55 to 63 days to grow. First, they are tiny baby plants called seedlings. Then, the plants grow flowers. The flowers turn into bean pods. The pods hold the seeds and are the part of the plant we eat.

When the beans are ready, a harvesting machine removes the pods from the plants. It loads the beans onto a big truck. Then, the beans are washed and trimmed. Finally, they are shipped to stores and schools, where students can enjoy fresh Florida-grown green beans.

Close Reading

Circle the best answer.

1. What is this passage ***mostly*** about?
   a. How to cook green beans
   b. The story of R.C. Hatton Farms and how green beans get to schools
   c. Why the Hatton family moved to Georgia
   d. How to build a farm truck

2. What year did R.C. Hatton Farms start?
   a. 2004
   b. 2026
   c. 1932
   d. 1950

3. What is another crop that R.C. Hatton Farms grows?
   a. Sugarcane
   b. Squash
   c. Wheat
   d. Oranges

Word Match

Match the word to its definition.

Irrigation	Raised soil where crops grow
Capillary Effect	Collecting food that has finished growing
Beds	Outer shell that holds the beans
Pod	A system of providing water to crops
Harvesting	Water moving upward through the soil
Acre	A plant family that includes green beans, black beans and peas
Legume	Unit of land about the size of a football field *(Hint: The farm takes up 12,000 of them)*

Write About It

Answer the questions below in complete sentences.

1. How do the green bean plants get water on the farm? Use details from the passage.

2. In one or two sentences, tell how green beans get from the farm to your school.

First, Next, Last

Number the events in the order they happen, from 1 to 6.

_____	_____	_____	_____	_____	_____
Beans are shipped to schools.	Flowers turn into bean pods.	Seedlings grow.	The beans are washed and trimmed.	Flowers grow.	The beans are harvested.

ANSWER KEY

Name _____ Date _____

Green Bean Video Trivia & Farm Math

Directions: Answer these trivia questions based on the video you watched about the Florida green bean farm.

1. How many days does it take for green beans to be ready to harvest? 55–63 days in the ground. (2:40)
2. What plant family are green beans part of? The legume family. (2:33)
   Bonus: Name two other foods in that family. Chickpeas, lima beans, black beans, lentils
3. What happens to the green beans on the "bean line" before they are packaged? The beans are washed and their ends are snipped (cut off). (3:41)

Circle whether the statements below are true or false.

4. Green beans are also called string beans or snap beans. **TRUE** FALSE
5. Green beans grow underground like potatoes. TRUE **FALSE**
6. The capillary effect can pull water upward, against gravity. **TRUE** FALSE
7. Farmers rely only on rain straight from the sky to water green bean crops. TRUE **FALSE**

Choose the correct word from the word bank to fill each blank.

Word Bank: **irrigate · vitamin C · bed**

8. Farmers build a bed of raised soil for each row, so the seeds don't get drowned out by rain.
9. Culverts, canals and ditches are used to move water and irrigate the farm.
10. Green beans are a good source of fiber and vitamin C

Continued →

Farm Math

Solve each problem and write your answer in the space provided.

1. A farmer harvested 45 bushels of green beans on Monday. On Tuesday, he picked 38 more bushels. How many bushels did he pick in all?

   45 + 38 = 83 bushels _____ bushels

2. One bushel of green beans weighs about 28 pounds. If a farmer had 50 pounds of beans in the truck but emptied out one bushel to be washed, how many pounds of beans would be in the truck now?

   50 – 28 = 22 pounds _____ pounds

3. One green bean plant grew 20 pods. Another plant grew only 14 pods. How many more pods does the first plant have than the second plant?

   20 – 14 = 6 pods _____ pods

Bonus: Farmer Charlie picks 3 bushels of green beans. Remember that each bushel of beans weighs about 28 pounds. He delivers 75 pounds of the beans to school cafeterias. How many pounds of green beans does Farmer Charlie have left?

3x28=84 84-75=9 pounds _____ pounds

Name _____ Date _____

Parts of a Green Bean Plant

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Flower
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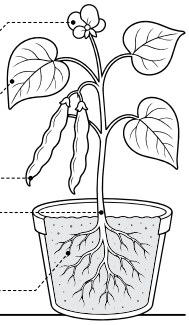
Seed



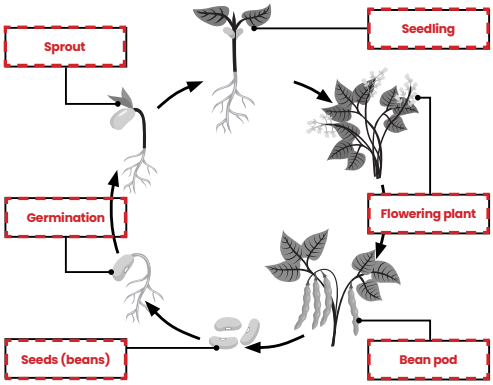
Now draw a line between each part of the plant and its function.

Roots	Absorbs water and nutrients from the soil
Stem	Absorbs sunlight to produce energy for the plant through photosynthesis
Leaf	Distributes food and water throughout the plant
Flower	The plant's "fruit" that holds the seeds
Pod	The part of a plant that produces seeds
Seed	Contains a baby plant that can grow into a new plant

Name _____ Date _____

Life Cycle of a Green Bean

Directions: Use the word bank to label each stage of the green bean plant's life cycle. Write the correct word in the box next to each picture.



ANSWER KEY

Name _____ **Date** _____

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Today, the farm grows sugarcane and vegetables in Florida. One of its vegetables is the green bean. Green beans belong to the legume family, just like black beans and peas.

Growing green beans takes planning and patience. First, farmers build raised beds of soil where the seeds can grow. Next, the plants need water. Farmers use ditches and canals to irrigate the fields. To irrigate means to bring water to the plants. The water moves through the soil and soaks up through the roots in a process called the capillary effect.

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When the beans are ready, a harvesting machine removes the pods from the plants. It loads the beans onto a big truck. Then, the beans are washed and trimmed. Finally, they are shipped to stores and schools, where students can enjoy fresh Florida-grown green beans.

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   d. Oranges

VIRTUAL FARM FIELD TRIPS
2-3 Worksheet
Green Beans
Standard(s) Supported: ELA.2.R.3.2 / ELA.3.R.3.2, SC.3.L.14.1, HE.3.CH.4.1

Word Match

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Acre	A plant family that includes green beans, black beans and peas
Legume	Unit of land about the size of a football field *(Hint: The farm takes up 12,000 of them)*

Write About It

Answer the questions below in complete sentences.

1. How do the green bean plants get water on the farm? Use details from the passage.

Sample answer: Farmers use ditches and canals to bring water to the fields. The water soaks up through the dirt into the roots. This is called the capillary effect. (Accept answers that name irrigation by ditches/canals and/or the water soaking up to the roots.)

2. In one or two sentences, tell how green beans get from the farm to your school.

Sample answer: Farmers grow the green beans in raised beds and water them. When the beans are ready, a machine picks them, and they are washed, snipped, put in bags, and sent to schools. (Accept any reasonable summary that moves from growing → harvest → ~~washing/snipping/bagging → shipping to schools.~~)

First, Next, Last

Number the events in the order they happen, from 1 to 6.

6	3	1	5	2	4
Beans are shipped to schools.	Flowers turn into bean pods.	Seedlings grow.	The beans are washed and trimmed.	Flowers grow.	The beans are harvested.