

SURPRISING BEANS

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CALIFORNIA CONTENT STANDARDS

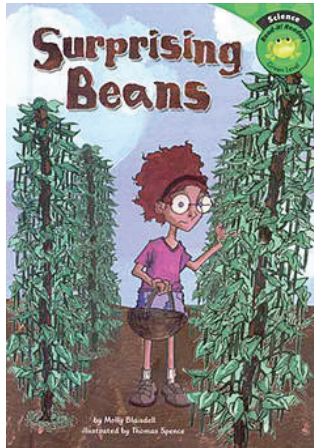
Kindergarten: Reading Comprehension 2.2 Use pictures and context to make predictions about story content. 2.3 Connect to life experiences the information and events in texts. 2.5 Ask and answer questions about essential elements of a text.

Grade One: Reading Comprehension 2.2 Respond to who, what, when, where, and how questions. 2.3 Follow one-step written instructions. 2.7 Retell the central ideas of simple expository or narrative passages.

Grade Two: Reading Comprehension 2.4 Ask clarifying questions about essential textual elements of exposition (e.g., why, what if, how). 2.5 Restate facts and details in the text to clarify and organize ideas. 2.7 Interpret information from diagrams, charts, and graphs.

Grade Three: Reading Comprehension 2.2 Ask questions and support answers by connecting prior knowledge with literal information found in, and inferred from, the text. 2.3 Demonstrate comprehension by identifying answers in the text. 2.4 Recall major points in the text and make and modify predictions about forthcoming information.

Grade Four: Reading Comprehension 2.4 Evaluate new information and hypotheses by testing them against known information and ideas. 2.5 Compare and contrast information on the same topic after reading several passages or articles.



GRADES: K - 4

READING LEVEL: 2.8

OBJECTIVES: 1. Explain where food comes from and write a paragraph about it, and 2) Demonstrate the ability to decide whether to use green beans or shell beans in different dishes.

SUMMARY

When Kayla and her parents went to volunteer at the community farm, she daydreamed about planting some of her favorites: tomatoes, cucumber, and watermelon. As she reached into the bag and pulled out her seed packet, her heart sank when she discovered she was going to spend her entire summer growing green beans—a vegetable she certainly didn't like. As she spent each day using her own hands to carefully cultivate and nurture the seeds into plants, her distaste for beans slowly turned into fondness... and by the end of that summer, green beans soon became Kayla's favorite vegetable.

FROM ATTITUDE TO GRATITUDE

In the story, we watched Kayla's attitude towards green beans change as she planted them and watched them grow. We don't know what Kayla's specific reasons were for why she didn't like the beans before. Maybe she didn't like the taste, or maybe she thought they were bland compared to the sweet taste of a watermelon, or the fragrant quality of cucumber, or the juiciness of a tangy tomato. We can't really be sure. What we do know is that with each day that Kayla spent cultivating the beans, she learned more and more about them, and soon grew an appreciation for them. In the end, at the harvest party, we even hear Kayla tell her friend Nicole that green beans were her "favorite food."

Most of us don't get a chance grow our own fruits and vegetables, or raise our own farm animals. When we sit down to eat something at home or at a restaurant, we often don't think about all of the work and energy it takes to produce the foods we eat. Most of us just see the sandwich or bowl of soup on the table in front of us, and we just eat it. We might be surprised and more appreciative of the food we eat if we thought about all the steps involved in



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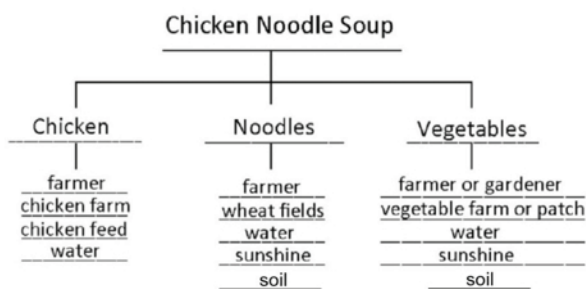


SURPRISING BEANS

LESSON CONT.

putting it together. Maybe food would taste even better.

Ask the students if they've ever thought about where the ingredients for chicken noodle soup come from. Using the Tree Map below to get started, explore the different components of chicken noodle soup and their origins. Add more detailed steps as desired (food preparation, the delivery from the farm to the store, and the work the grocery employees have to do to display each item in the store).



ACTIVITY

On a small piece of paper, assign each student to write down the name of a food, preferably one that has to be prepared as an entrée item or side dish (eg. Instead of “apple” one might write “fruit salad”.) Fold the paper and place in a paper bag or basket. Have each student then take a piece of paper from that basket to pick a food that someone else contributed. Ask each student to think of all the ingredients in the food and the different processes involved in making the ingredients, as in the exercise demonstrated in class. Help them organize the information into a tree map or brace map. Then assign each student to write a paragraph using the tree map about the processes involved in making that food item.

WHEN I GROW UP, I WANT TO BECOME... A SHELL BEAN

Edible pod beans

The whole young pods of bean plants, if picked before the pods ripen and dry, are very tender and may be eaten cooked or raw. Some that we are familiar with are green beans, snap peas, or snow peas. When we think of green beans, what will naturally come to mind is the variety of green bean most of us are familiar with: the long light green pods that we often see....Although most of us are familiar with the beloved green bean, the term “green beans” actually means means “green” in the sense of unripe. Many, in fact, are not green in color. Kayla discovered that they come in many different colors (pg. 9 in the book) when she researched them on the internet.

EXTENSION ACTIVITY

- Ask the students to write a short paragraph or two about what they think will happen if they were to grow their own vegetables or fruits? What will the impact be? Will they like them more? Will they talk about them more to their friends and family? Will they encourage more people to eat them? If so, how? Will they find creative uses for them in recipes and share them with people? Will it change the way that they eat? Will it spur them to adopt other healthy habits?



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LESSON CONT.

Did you know that some are flecked with purple or red streaks like Dragon Tongue or Cranberry Beans? Others, like Winged Beans look like feathers. (Show attached pictures provided on the last two pages of this lesson). Ask students for a show of hands, how many have heard of or seen dragon tongue beans, cranberry beans? What about winged beans?

Shell Beans and Dry Beans

Some beans are not picked early and are allowed to mature on the plant. In the story, (p. 28 in the book) Kayla picked both large and small pods. The largest pods were shelled and the beans inside were saved for eating. The reason for this is that the pods become tough and inedible. The beans inside grow larger and the nutritional content changes. These shelled beans can be cooked and eaten. Some examples of shell beans are canellini, edamame, fava (aka “broad” beans), and lima beans. Occasionally, cranberry beans are available fresh. Show pictures. Many shell beans can be dried so that they can be stored and used later. Some common varieties of dried beans include black, garbanzo, mung, kidney, navy, pinto, and red beans to name just a few.

What changes?

Allowing edible pod beans to mature on the plant so that they can be shelled not only increases the size of the bean inside the pod, it also changes the nutritional value. Among some of the changes are: 1) the carbohydrate content of the beans increases, thereby supplying energy for our bodies, 2) the protein content increases, which can supply us with material for wound healing and muscle building, and 3) the type and amount of available fiber changes. In young green beans, the whole pod is eaten and one can get insoluble fiber, which helps with regularity. Foods with insoluble fiber are useful for increasing the volume, or amount, that you eat so that you can feel fuller without adding a lot of calories. When eating mature shell beans or dry beans, the pod becomes too tough to eat and is therefore discarded. From the shell beans, one can not only get insoluble, but also soluble fiber. Soluble fiber can help with regularity, and has the added benefit of helping to lower cholesterol levels as well.

Although both share the name “beans,” and are both technically vegetables, the higher protein content of shell beans, make them part of the Meat group, while green beans, which do not contain a lot of protein, are considered to be part of the Vegetable group.

Compare the calorie, carbohydrate, protein, and fiber content of green beans vs. kidney beans.

Green Beans, cooked, 1/2 cup	Kidney Beans, 1/2 cup
Calories 25	Calories 112
Carbohydrate 4g	Carbohydrate 20g
Protein 1g	Protein 7.5g
Total Fiber 2g	Total Fiber 7.9g
Insoluble Fiber 1.5	Insoluble Fiber 5.9
Soluble Fiber 0.5g	Soluble Fiber 2.0g



WHICH ONES WILL I USE, GREEN BEANS OR SHELL BEANS?

DIRECTIONS: Plan what type of beans (green beans or shell beans) you will use the next time you eat the following dishes:



_____ can
be added to my salad for
some protein.



_____ can
be added to a small meal of
chicken and rice to make the
meal bigger without adding a
lot of calories.



_____ can
be used to replace the beef in
my burrito.



_____ can
be washed and eaten raw with
a tablespoon of low fat ranch
dressing for a low calorie
snack.



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UNUSUAL EDIBLE POD BEANS



WING BEANS



CRANBERRY BEANS



DRAGON TONGUE BEANS



SHELL BEANS



**EDAMAME
(SOYBEANS)**



CANELLINI BEANS



CRANBERRY BEANS

Cranberry bean pods can be allowed to mature so that their cranberry beans can be shelled.