

Fruit or Not?

It may come as a surprise, but several vegetables we eat every day are actually fruits! Fruits are defined as the ovary of a plant, which contains the seeds. Several foods we commonly call vegetables, such as peppers, tomatoes, beans, pumpkins and cucumbers are actually the fruit of a plant because they hold the seeds. True vegetables would be foods that are the stems, leaves, roots, or flowers of the plant. Generally foods that are sweet are labeled as “fruits,” and foods that are not sweet are called “vegetables.” In this lesson, challenge what your students already know to see if they can win the game of “Fruit or Not?”

SUBJECTS



NUTRITION



SCIENCE



MATH

GRADE LEVEL

K-2

TIME

45 min

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Objectives

- Students will be exposed to both familiar and new foods in a scientific way
- Students will be able to identify produce as a fruit or vegetable
- Students can compare and contrast similarities and differences between the two types of foods
- Students will categorize the vegetables and fruits and count the number of each; students may count and record the number of seeds after measuring, if time allows
- Student will organize, represent and interpret data with up to three categories; ask and answer questions about the total number of data points; identify how many fit in each category and compare groups of data; graph results (groups of students or teacher may graph)

Materials & Preparation

- Several types of fresh produce, such as strawberries, bananas, oranges, apples, kiwi, peppers, pumpkins, cucumbers, mango and peaches as well as some examples of “true” vegetables such as potatoes, carrots, beets and broccoli
- Fruits/vegetables will need to be cut in half and placed in a dish for each team of two students
- Keep paper towels or wipes handy for clean up
- Separate dishes for collecting the seeds
- Measuring tools such as rulers or scales

Common Core Standards

- **1.MD.4.** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less in one compared to the other.
- **RL.1.1.** Ask and answer questions about key details in a text.
- **K.MD.3.** Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
- **K.MD.2** Directly compare two objects with a measurable attribute in common to see which object has more or less of the attribute and describe the difference.
- **RL.2.1.** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text

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Lesson Introduction

1. Begin a discussion about what makes a fruit a fruit. Student responses might include that it's sweet, it's healthy, it grows on a tree, it has a stem, it comes from a seed, etc. Have students imagine all the fruits they've ever eaten before. What other things do they have in common? Read excerpt from a non-fiction book that discusses this.
2. Challenge students to the "Fruit or Not?" competition. Show pictures or list a large variety of fruits and vegetables and have the class make a prediction about whether or not the picture or word is a fruit. Have a student keep track of everyone's answers on the board.
3. If not already mentioned, introduce the idea that a fruit has seeds. Explain to students that they will be working in pairs to investigate if a type of produce is a fruit or not.

Body of Lesson

4. Pair students at a table across from a partner. If worried about potential messes, tables can be covered in newspaper first.
5. Give each pair a bowl/plate with one type of produce. Challenge students to discover if the produce is a fruit or not. If so, suggest that they collect and count the seeds. This exploration should take several minutes.
6. Once students have used the evidence in front of them to decide if their produce is a fruit or vegetable, discard or compost the produce and save the seeds. Have students clean up their workstations and return to the group discussion area.

Conclusion

7. Go through the produce one-by-one and compare with what the students found compared to their initial predictions. Was their prediction correct? Why or why not?
8. An option would be to conclude the lesson and discussion with the book "A Fruit Is a Suitcase for Seeds" by Jean Richards.

Assessment

- As an assessment, quiz the students during meal or snack times about the food on their plate. Is this (carrot) a fruit or not?

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Extensions

- First grade: Count and measure the seeds (either size or weight) and make a graph comparing the number and sizes of seeds in different fruits. Why might the seeds be so big or so small? Why might there be so many of them? Which is the only fruit we explored that has seeds on the outside? (Answer: Strawberry)
- Organize, represent, and interpret data by asking and answering questions about the total number of data points of fruits and veggies, how many in each category, and how many more or less are in one compared to the other.
- If there are materials and space available, have students plant the seeds (an egg carton is a great seed starter) and see what the sprouts look like. Do tiny seeds produce tiny plants? Do large seeds produce large plants? Compare and contrast.
- Guided reading, read aloud, home, or classroom library suggestions:
 - “I’m a Seed” (Hello Reader) by Jean Marzollo
 - “How and Why Seeds Travel” (How and Why Series) by Elaine Pascoe

Stem Alignment

- Analyzing and computational thinking
- Reason abstractly and quantitatively
- Construct explanations and design solutions.
- Obtaining, evaluating, and communicating information