

Math Collecting Taste Test Data



Jenna Mobley, Tending Our Common Ground

Overview:

The class will taste test summer squash or zucchini and then attempt different methods for collecting and analyzing data that shows how many students liked it, loved it, and didn't care for it - from raising hands, to counting, to using tallies, to creating a human graph, to a pictograph, to a bar graph. After the class discovers the most effective way to collect and organize data, they will survey another class and show their data visually to then analyze effectively.

(Time Needed: Approximately 1 hour)

Common Core Math Standards:

- Measurement and Data
 - Kindergarten:
 - CCSS.MATH.CONTENT.K.MD.B.3. Classify objects into given categories; count the number of objects in each category and sort the categories by count.
 - 1st Grade:
 - CCSS.MATH.CONTENT.1.MD.C.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 are in one category than in another.
 - 2nd Grade:
 - CCSS.MATH.CONTENT.2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Objectives:

- Students will be able to classify taste test votes into three given categories and count the number of votes for each category.
- Students will be able to represent data of votes in three categories by drawing a bar graph with a single-unit scale.
- Students will be able to interpret data depicted in a bar graph – asking and answering questions about the total number of votes, how many votes in each category, and how many more / less are in one category than another.

Math Collecting Taste Test Data



Materials:

From the Grocery Store:

- Summer Squash or Zucchini
- Optional: Ingredients for a Squash Recipe or Dressing Recipe
 - [Parmesan Yellow Squash Rounds](#)
 - [Raw Summer Squash Salad](#)
 - [No-Bake Zucchini Bread Granola Bites](#)
 - [Zucchini Pizza Bites](#)

From the Classroom:

- Whiteboard and markers
- 20 Index cards with each with a number 1-20
- Graphing chart paper (optional)
- Pencils and coloring supplies

Reproducibles:

- Blank bar graph with 3 categories (1 for each small group)
- Blank tally chart (1 for each small group)

Outline:

- Engage: Host a summer squash or zucchini test
- Explore: Explore methods for data collection
- Explain: Explain the method of bar graphs
- Extend: Collect data and create own bar graph

Lesson Plan:

- Engage (whole group / in seats) - 10 minutes
 - Taste test summer squash or zucchini with the whole class.
 - Resources: [Facilitating a Taste Test \(in the Classroom\)](#)
- Explore (whole group / on carpet) - 15 minutes
 - Attempt to collect data by raising hands and observing the number of students visually.

Ask students:

- How many students loved it? Liked it? Didn't care for it?
- How many more students loved it than didn't care for it?

It should be difficult for students to answer just from a visual and temporary show of hands, particularly with the difficulty of knowing the exact number in each category.

Math Collecting Taste Test Data



- Attempt to collect data by counting the number of students and writing the numbers on the board. Ask students:
 - How many students loved it? Liked it? Didn't care for it?
 - How many more students loved it than didn't care for it?

It should be difficult for students to compute the difference in the number of votes despite an exact number in each category.

- Create a human version of a bar graph by lining up students that liked it, loved it, and didn't care for it in parallel lines. Ask students:
 - How many students loved it? Liked it? Didn't care for it?
 - How many more students loved it than didn't care for it?

While it may be more difficult to tell exactly how many students are in each category, it should be easier to tell how many more / how many less in each category by demonstrating how to find the level between two categories and simply count the students above and below that line.

- Add number labels to the human bar graph so that all students in each parallel line for each category line up with a specific number. Ask students:
 - How many students loved it? Liked it? Didn't care for it?
 - How many more students loved it than didn't care for it?

It should be simple for students to find the line of students that correlates with the question and to look across to the axis for the number of students rather than counting. Comparing numbers should be as simple as the previous method.

- Explain (whole group / on carpet) - 15 minutes
 - Explain to students that they are going to work together to create a visual representation of the lines they have created.
 - Create a tally chart together representing humans with vertical lines but recalling that the fifth line goes across the group of five for ease of counting.
 - Create a pictograph together as a class using figures of humans to represent each student in each of the three categories.
 - Create a bar graph together as a class explaining that the figures of humans will now become rectangles in a line with number labels for a clear and simple visual representation to analyze.

With the class bar graph on display. Ask students:

- How many students loved it? Liked it? Didn't care for it?
- How many more students loved it than didn't care for it?

It should be simple for students to determine how many votes were counted in each category and to compare the categories.

Math Collecting Taste Test Data



- Extend (small groups / in seats) - 20 minutes
 - Allow students to visit other classes to collect data asking the question “Do you like squash?” providing the options “love it,” “like it,” and “don’t care for it” noticing whether the students had participated in a taste test of the vegetable at school yet or whether it’s based on the previous experiences.
 - In small groups, students can create a bar graph displaying their data.

- Evaluate

Example Evaluation

Based on the bar graph you created in your small group...	
<i>Kindergarten</i> CCSS.MATH.CONTENT.K.MD.B.3.	
How many students love the vegetable?	
How many students like the vegetable?	
How many students don’t care for the vegetable?	
<i>1st Grade</i> CCSS.MATH.CONTENT.1.MD.C.4.	
How many students participated in the survey?	
How many more / less students liked the vegetable than didn’t care for the vegetable?	
<i>2nd Grade</i> CCSS.MATH.CONTENT.2.MD.D.10.	
How many students liked or loved the vegetable?	
How many more / less students liked or loved the vegetable than didn’t care for the vegetable?	



Math Tally Chart _____



_____ (Title)

By: _____

Loved it!	Liked it!	Didn't Care for It.

Math Facilitating a Taste Test In The Classroom



- **Materials:**
 - veggies
 - cutting boards, plates, knives
 - post-it notes
 - “Kitchen Parts of Speech” posters
 - “Good Enough to Eat” book
 - “Before We Eat” book
- **Focus Standards:**
 - Science: 5 Senses, Plant Needs, Plant Parts, Seasons
 - Math: Division, Graphing
 - ELA: Phonics Parts of Speech
 - Nutrition
- **Lesson:**
 - **Engage:**
 - Teacher distributes a paper plate of “mystery veggie” to each table.
 - How would you describe what the veggie looks like? What shape is it? What shape would you see if you cut it in half? *Review geometry concepts.*
 - How does the veggie feel, and smell? *Use senses.*
 - What is the name of the veggie? *(Teacher collects data).*
 - How do you spell that? *Review phonics concepts.*
 - **Explore (in small groups, in garden journal):**
 - How does the veggie grow? *Share big ideas on plant parts.*
 - When do you think it grows? *Share big ideas on seasons.*
 - How much space do you think it needs to grow? *Share big ideas on plant needs.*
 - How long do you think it takes to grow?
 - **Explain:**
 - Have you tried this veggie before? *(Teacher collects data).*
 - Why would we eat this veggie? *Share big ideas on nutrition.*
 - How can we divide these veggies among the students? *Review division concepts.*
 - How do we safely cut veggies? *Claw and saw. Flat side down.*
 - After you try the veggie, how should you express your opinion of it?
Model positive adjectives.
 - Let’s eat together!
 - What words can use to describe the veggie? *Use a word bank of taste and texture adjectives.*

Math Facilitating a Taste Test In The Classroom



- Extend (optional):
 - With Butter and Bread
 - With a Dressing
- Evaluate:
 - Bar Graph: Loved it / Liked it / Didn't Care for it