Comparing Numbers and Fruit—More or Less

Comparing Numbers

K20 Center, Christine Cox
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Grade Level	1st Grade	**Time Frame**	2-5 class period(s)
Subject	Mathematics	**Duration**	120 minutes
Course	Elementary Mathematics		

Essential Question

How do we compare amounts of things?

Summary

In this lesson, students use a variety of manipulatives to create and compare numbers. They practice comparing number sets using phrases such as “smaller,” “more than," “less than," “equal," “the same as,” etc. Students use their understanding of comparing numbers to create and read a class graph about their favorite fruits.

Snapshot

Engage

Students discuss the different ways they can show a number.

Explore

Student practice building numbers using tools such as number lines, 10 frames, tally marks, among others and partner to compare numbers.

Explain

The class reads "More or Less" by Stuart Murphy and plays the "More/Less/Same" game.

Extend

Students try a variety of fruits and make a graph to describe their favorite ones. They then compare the amounts in the different categories.

Evaluate

Using the Four Corners strategy, students compare the amounts in the graph.

Standards

Oklahoma Academic Standards for Mathematics (Grade 1)

1.N.1.6: Compare and order whole numbers from 0 to 100.
1.N.1.7: Use knowledge of number relationships to locate the position of a given whole number on an open number line up to 20.
1.N.1.8: Use objects to represent and use words to describe the relative size of numbers, such as more than, less than, and equal to.
1.D.1.1: Collect, sort, and organize data in up to three categories using representations (e.g., tally marks, tables, Venn diagrams).

Attachments

- More or Less Guiding Question Cards.docx
- Number Cards First Grade.docx
- Number Cards Kindergarten.docx

Materials

- Number Cards for kindergarten
- Number Cards for first grade
- "More or Less" Guiding Question Cards
- "More or Less" by Stuart Murphy
- Balance scale with manipulatives, such as counters, bears, markers, etc. (optional)
- Number lines
- 10 Frames
- Whiteboards and markers
- Base 10 blocks
- Rekenrek (optional)
- Beads on a pipe cleaners (optional)
- Snap cubes (optional)
- 3–5 Varieties of fruit

Engage

In a whole group setting, ask students, “What are the different ways we can show the number 17?” Write down and draw student answers for everyone to see.

Teacher's Note: Sample Answers

"17 pennies," "One ten frame and 7 more," "One ten and 7 ones," and many others.

Kinder Question:

For kindergarteners, level down the question to ask, “What are the different ways we can show the number 7?”

Now ask the class, “Is 17 more, less, or the same than 71?” Allow students to shout out the answers, "More," "Less," or "The same." Tell the class, “Today we are going to talk about how we know if numbers are bigger or smaller than each other.”

Kinder Question:

For kindergarteners, level down the question to ask, “Is 7 more or less or the same as 2?”)

Explore

Teacher's Note: Lesson Prep

Set up centers to include one of the number-making tool (tool ideas are provided below) at each center. Print and cut out a set of Number Cards and a set of Question Cards for each station. Number Cards for both first grade and kindergarten are attached, along with Question Cards.

Ideas for Number-Making Tools to use in centers:

- Balance scale (with manipulatives such as counters, counting bears, markers, etc.)
- Number line
- 10 Frames
- Tally marks
- Base 10 Blocks
- Rekenrek (more information available here)
- Beads on a pipe cleaner (more information available here)
- Snap cubes

Pair students and allow them to visit the centers in rotations. While at each center, students build and compare numbers with a partner. Students should draw a card from the Number Cards and take turns using the tool at their center to build the number they've drawn. Then students compare their number to their partner's number.

Using the Guiding Question cards (attached), have students discuss whose number is:

- Larger?
- Smaller?
- More?
- Less?
- The same?
- Equal?

After a few rotations have students compare numbers using different tools. For example, "What does 14 look like in Base 10 blocks versus 14 in tally marks?"

Teacher's Note: Allowing Time To Explore

It is okay for the center activities to take a couple of days. Allow students ample time to explore.

Explain

As a class, read More or Less, by Stuart Murphy. If the book is unavailable, you can watch a YouTube video of the book being read aloud here. (The full URL for the video is also listed in the Resources section at the end of this lesson.)

Play the "More/Less/Same" Game. This game is a spin on the card game “War.” Use the Number Cards from the Explore activity for either kindergarten or first grade, depending on your class level.

Have partners evenly split a set of Number Cards (some curriculum sets come with similar cards that are perfect for this activity). Students each lay down a card simultaneously and decide who has the largest number. The person with the largest number collects both cards. When the partners have run out of their original deck, they count the number or cards that they have collected. The person with the most cards wins.

Circle through each of the groups to listen to their conversations and help clear up any misconceptions.

Scaffold Challenge!

Have each student partner put out two cards, add them together, then compare them. For example: 3 + 10 and 4 + 12.

Teaching Note: More Uses For "more/less/same"

You can continue to use this game out throughout the year at various times (center activities, indoor recess, game days) so that students can practice and refresh their understanding of numbers.

Extend

In the Extend, have students use a class-created graph to compare the number of students that like various fruit.

Have a selection of fruits available for the class to sample. Below are some easy to find fruit ideas:

- Apples
- Oranges
- Banana
- Cantaloupe
- Grapes
- Strawberries

Whole Child Note:

Some students may not be familiar with each of these fruits. To create a more equitable experience, have students try a small sample of each. This will give each student a chance to try a healthy snack and will give all children a chance to experience the fruit. You can also substitute any of the fruits above for other choices like kiwi, mango, or blackberry.

Ask students to vote on their favorite fruits to eat. Limit the selections to three to five fruits.

Create the graph as a class using chart paper or a smartboard. Ask the students, “What are some of the parts we need to make a graph?” They should come up with some or all of the key elements, such as the x and y axes and bars to represent the different fruits. If not, guide them to discover these parts of a graph.

- Label the bottom axis with the categories/types of fruit.
- Have the class help with creating a title for the graph.
- Count the number of students that voted for each fruit and place a picture or icon representing a vote for each fruit in the matching category/type column.

Ask the class, “How do we compare the different groups?” Discuss some of the following:

- We look at how tall the bars are to tell how many people liked each choice of fruit.
- The taller columns mean there are more votes.
- Each picture represents one person’s vote/choice.
- The shortest column has the least votes.

Evaluate

Using a version of the Four Corners strategy, label each corner as one of the fruits. Ask students to move to the appropriate corner based on their answers to the following questions about the graph:

- Which fruit has the most votes?
- Which fruit has the least votes?
- Which has more vote, apples or oranges? (Students choose either the apple or orange corner.)

Finally, return to the question from the Engage:Kindergarten: “Is 7 more or less or the same as 2?” First Grade: “Is 17 more or less or the same as 71?“

Evaluate how the students' are able to answer these questions now compared to their ability to do so before the lesson and activities.

Resources

- Frykholm, J. (2008). Learning to think mathematically with the Rekenrek: A resource for teachers, a tool for young children. [PDF file] Boulder, CO: Cloudbreak Pub. Retrieved from https://www.mathlearningcenter.org/sites/default/files/pdfs/LTM_Rekenrek.pdf
- Justesen, Collette. “More or Less by Stuart J.Murphey (GSD).” YouTube, YouTube, 16 Oct. 2017, www.youtube.com/watch?v=zqQj02jGDfo.
- K20 Center. (n.d.). Four corners. Strategies. Retrieved from https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5064550
- Rachel, et al. “Counting Beads on Pipe Cleaners.” Laughing Kids Learn, 25 July 2015, laughingkidslearn.com/counting-beads-on-pipe-cleaners/.