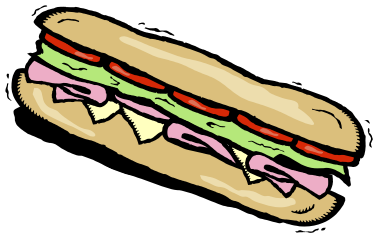


Scaffolding Task: Their Fair Share

Adapted from Fosnot, C. The Field Trip, Context for Learning Mathematics.

STANDARDS FOR MATHEMATICAL CONTENT

MCC4.NF1 Explain why a fraction a/b is equivalent to a fraction (nxa)/(nxb) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Constructing the idea that fractions are relationships and that the size or amount of the whole matters is a critical step in understanding fractions. Fair sharing contexts also provide learners with opportunities to explore how fractional parts can be equivalent without necessarily being congruent. They may look different but still be the same amount. Students have worked with the concept of fair share or partitioning from 2nd grade, with standards which refer to same-sized shares or equal shares.

ESSENTIAL QUESTIONS

- How can we use fair sharing to determine equivalent fractions?
- How do we know fractional parts are equivalent?

MATERIALS

- Connecting cubes
- Equal length strips of paper
- Chart paper
- Fraction Kits from previous task (optional)

GROUPING

small group or partner

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Comments: The numbers in this story have been chosen purposefully. Given the chosen numbers, students are catapulted into proportional reasoning. It is important that you facilitate discussions regarding their thinking at this point allowing them the opportunity to figure out how much each person in each group received.

When students begin to compare and/or add pieces together, some students may attempt to represent subs with the connecting cubes, but may not make equal size subs. If you see students using various sizes, be sure to point this out by asking if one group received bigger subs. Stay grounded in the context to help students realize the meaning of what they are doing. You want students to derive a common length sub in order to compare and/or add the fractional amounts. This idea is important for the construction of common denominators.

Make all materials available for use.

Task directions:

Students will follow the directions below from the "Their Fair Share" student sheet.

A fourth- grade class traveled on a field trip in four separate vehicles. The school provided a lunch of submarine sandwiches for each group. When they stopped for lunch, the subs were cut and shared as follows:

- The first group had 3 people and shared 2 subs equally.
- The second group had 4 people and shared 3 subs equally.
- The third group had 9 people and shared 6 subs equally.
- The last group had 6 people and shared 4 subs equally.

When they returned from the field trip, the children began to argue that the portion of the sandwiches they received was not fair, that some children got more to eat than others. Were they right? Or did everyone get the same amount?

Create a poster of the ideas and strategies you used to solve this problem. Be sure your poster is concise and clear presentations of the important ideas and strategies you want to present.

FORMATIVE ASSESSMENT QUESTIONS

- What initial cut did you make to your subs? Why?
- Did you use all parts of the subs? Were each parts equivalent?
- (For students using connecting cubes) Were all subs the same size? What amount of cubes could you use to show all of the subs were the same size?

DIFFERENTIATION

Extension

- Encourage students to try a different strategy to determine if they will arrive at the same fractional parts.

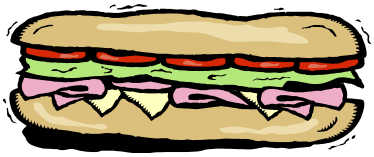
Intervention

- Have students use strips of equal length paper to represent the submarine sandwiches.
- Encourage students to use connecting cubes. Have them begin with 12 cubes to get them thinking about how to show common length subs.

Name _____ Date_____

Their Fair Share

Directions



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