**Cornbread Fundraiser**

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| **Mathematics Goal: Relational Thinking---** Students will develop mathematical generalizations connecting previous understandings of whole number multiplication to multiplication with fractions. They will make connections between strategies and representations. |
| **Problem to Pose:** The 5th graders want to raise money for their overnight camping trip by selling cornbread during the school Chili Cook-Off contest. All the pans of cornbread are square. A pan of cornbread costs $12. The customers can buy any fractional part of a pan of cornbread and pay that fraction of $12. For example,  of a full pan costs  of $12. 1. The first customer, Mrs. Farmer, buys cornbread from a pan that is is  full. She buys  of the remaining cornbread in the pan.
2. What fraction of the whole pan of cornbread does she buy? Use objects and/or a diagram to show how much of the pan of cornbread she buys.
3. What does she pay for the cornbread she bought? Use objects and/or a diagram to show how much she pays.
4. The next customer is the school principal. He buys cornbread from a different pan that is full. He buys of the remaining cornbread in the pan.
5. What fraction of the whole pan of cornbread does he buy? Use a diagram to show how much of the pan of cornbread he buys.
6. What does he pay for the cornbread he bought? Use a diagram to show how much he will pay for his part of the pan.
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| **Anticipated Strategies** | No Access | Sets up Model | Draw model, identify 1/4 and 1/3 of area, finds product |
| Equivalence (1/3 is 4/12, so ¼ of 1/3 is 1/12) | Relational Thinking (Including taking 1/3 of any whole and dividing by 3, applying to fractions) |
| Equation (1/4 x 1/3 =1/12) | Can solve but cannot name the solution | Subtraction |
| **Sequence of Sharing****1****2****3** |
| 1. **Closure/Exit Ticket:** Mr. Farmer buys cornbread from a pan that is $\frac{1}{2}$ full. He buys $\frac{3}{5}$ of the remaining cornbread in the pan. What fraction of the whole pan of cornbread does he buy? Where do you see multiplication in this problem? Explain your reasoning.
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| **Questions to pose during discussion** | **Questions to make student thinking visible and probe student thinking:*** What is her/his fraction of the whole pan? (refer back to the question and the whole in the problem)
* Can you draw a picture that represents this problem?
* How did you solve the problem?
* What did you do first?
* What do you already know that helped you figure that out?
* What does \_\_ represent?
* Why does that strategy work?
* Can you think of another problem where this strategy would work?
* Does this method always work? Why/How do you know?
* Is there only one answer? How do you know?
* How does change in one quantity impact the other quantity? What if Mrs. Farmer wanted to buy ½ of the pan of cornbread that is 1/3 full? Why does that happen?
* Where is ¼ in your representation? What does ¼ represent?
* Where is 1/3 in your representation?
* What if you only had $\_, how much could you buy then? How do you know?
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| **Questions to dig deeper into strategies:*** *How is this strategy similar or different to \_\_\_ strategy?*
* Do you notice any patterns?
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| **Engaging students in each other’s thinking:*** What do you think \_\_\_ did? Why do you think that?
* Would someone be willing to add on to what \_\_\_ said?
* How could you explain what \_\_ said in a different way?
* *How does this relate to what \_\_ said?*
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