

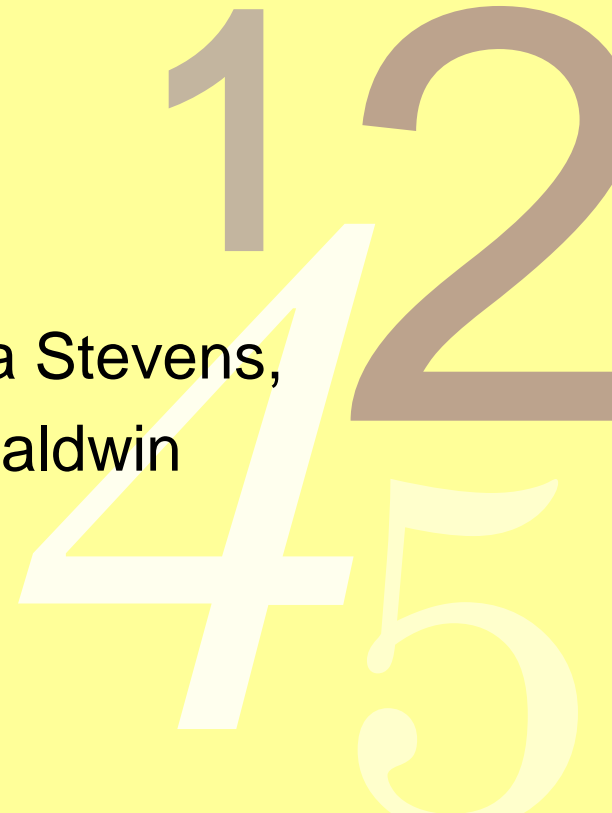
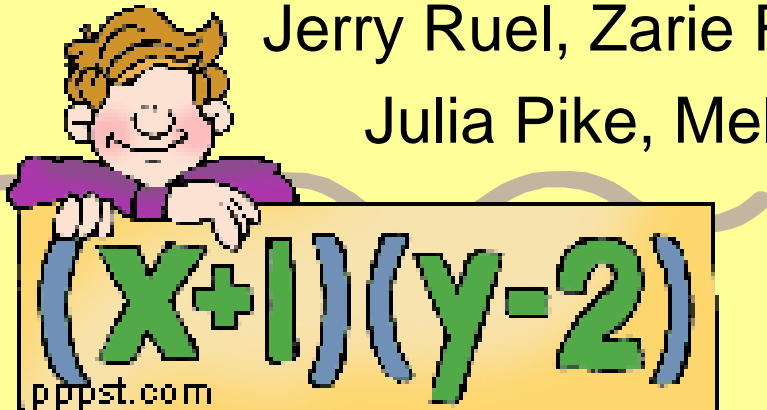
Combinations of Pizza Toppings

A Lesson Study at Westlawn Elementary

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Presented by

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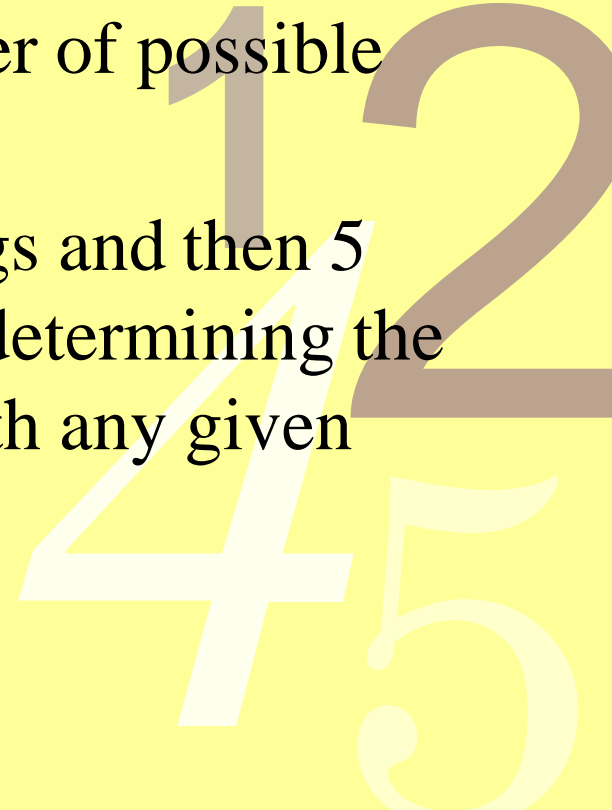


The Pizza Problem

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Tony's Pizza is having a fundraiser to benefit your school. You can order pizzas with 3 different toppings: Pepperoni, Sausage, and Mushroom. Your task is to determine the number of possible ways there are to order a pizza.

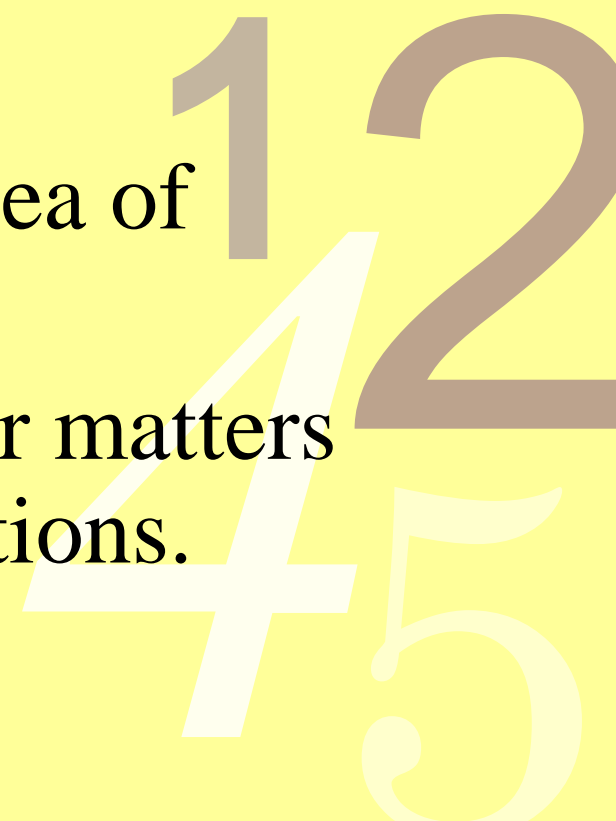
Repeat the problem using four toppings and then 5 toppings. Can you build a rule for determining the number of pizzas you can create with any given number of toppings?



The Lesson Objective

- represent data through physical and graphical means,
- draw conclusions from the data
- communicate their findings to fellow classmates,
- explore the mathematical idea of combinations of two items,
- explore whether or not order matters when determining combinations.

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Westlawn Lesson Conclusion

- As our group started the observation, we quickly realized that these students had a good amount of background knowledge. It was obvious to us that there has been habits of mind already established. Students were able to make connections to previously learned problems and many had a sense on how to approach the problem. They had good number sense and a repertoire of strategic approaches to open ended problem solving.



Experiences with Our Students

- Scope and complexity of the Pizza Problem is within the capabilities of 4th and 5th grade students.
- Level of required support and scaffolding is highly dependent upon the experience and capabilities of a specific class
- Need specific instruction and practice in organized, sequential thinking, e.g.
 - Solve for all combinations of no toppings.
 - Solve for all combinations of one topping.
 - Solve for all combinations of two toppings, etc.
 - Solve for all combinations where pepperoni is one topping
 - Repeat for other toppings being careful to exclude previous.