



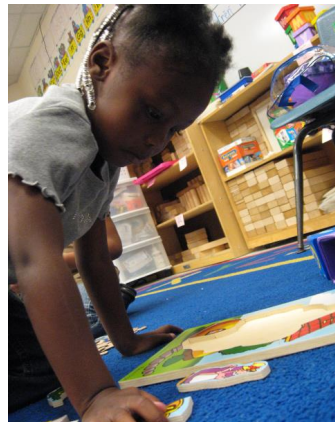
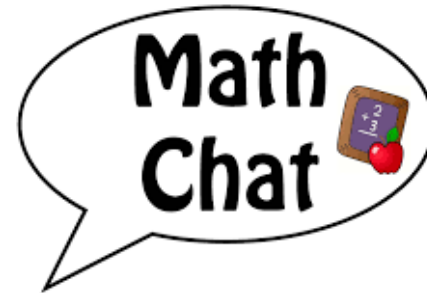
Building Strong Mathematics Foundations in Early Childhood

Amy Noelle Parks

Michigan State University



A Plug for Early Math ...



- What do children need to know and be able to do in terms of mathematics content?
- What do children need to know and be able to do in terms of problem solving?
- What do children need to know and be able to do in terms of test preparation?

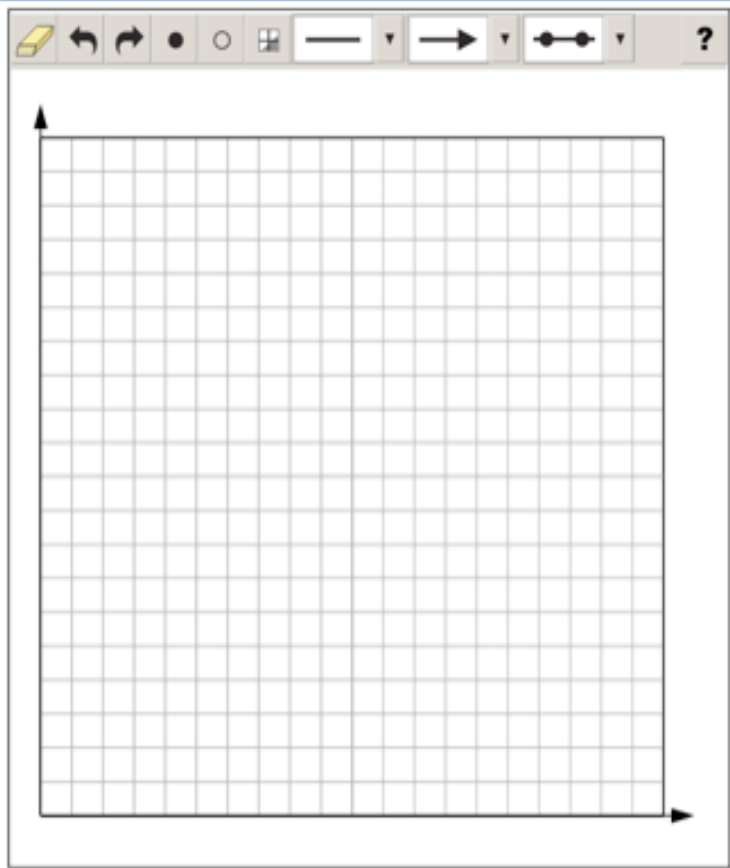


A pencil has a mass of 25 grams. An apple has a mass that is 75 grams more than the pencil.

What is the mass of the apple, in grams?



6. Maya says that a rhombus cannot also be a rectangle. Show Maya that her statement is not true. Draw a rhombus that is also a rectangle.

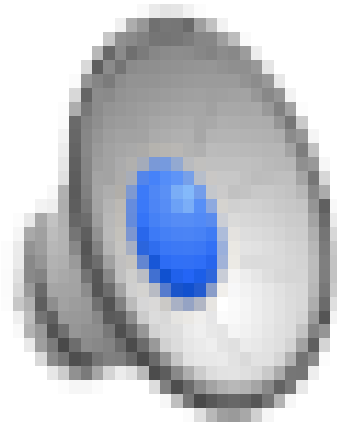


What do primary grades teachers need to do?

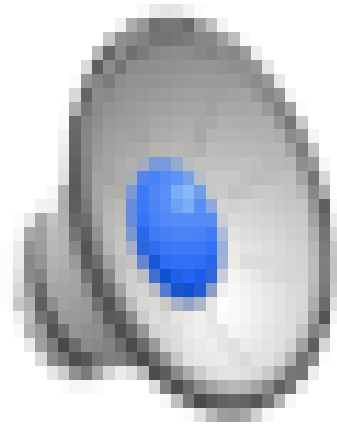
- Help kids build a rich understanding of number;
- Let kids practice putting numbers together and taking them apart in flexible ways;
- Support kids in constructing “anchor numbers,” e.g., 5, 10, 15;
- Help kids build mental models of shapes.
- Give kids experience solving problems independently.



Counting



Counting



Counting



Top 5 Practices to Strengthen Early Mathematics



End tracking.



Don't require all students to learn all solution strategies – even if your curriculum suggests they should.



Grade 1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Grade 3: Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.



Grade 1: Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, **e.g.**, by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.



Grade 3: Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, **and/or** the relationship between addition and subtraction.



End timed tests.



Support playful, materials-rich engagement with mathematics.





Help teachers create a language-rich, problem-based environment.



CGI Video



