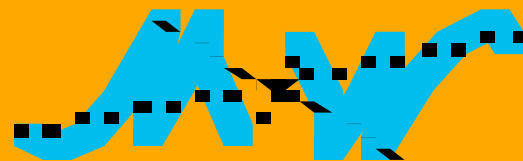


Math Workshop

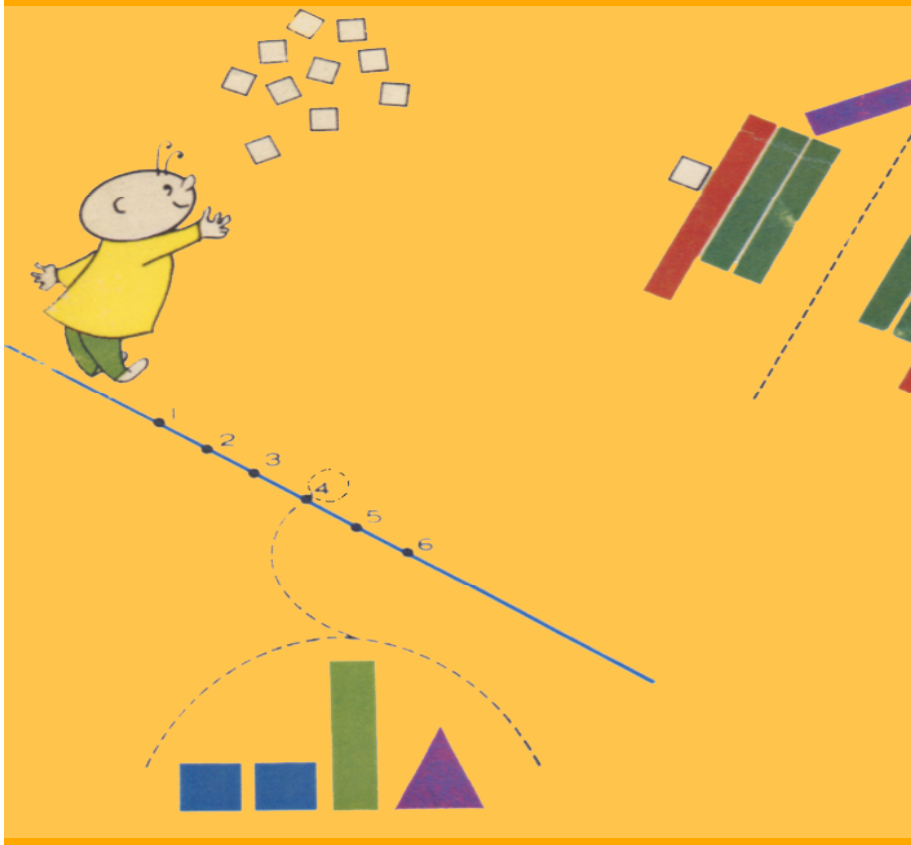
Classical Mathematics for the Modern Classroom

A comprehensive K--5 elementary curriculum
Education Development Center, Inc.

With support from NSF



A K--5 curriculum that increases teachers' content knowledge while they teach



- Based on ***Math Workshop***
- by R. W. Wirtz, M. Botel, M. Beberman, and W.W. Sawyer

Issues to consider in the curriculum selection and implementation




- ***Emphasis:*** problem solving; mastery of basic skills and algorithms; investigation and discovery
- ***Assessment:*** how is it done in the curriculum and how is it aligned with standardized tests
- ***Manipulatives and technology:*** calculators
- ***Individual Differences:*** appropriateness for the wide range of student abilities and learning styles

Issues (continued)

- ***Teacher role and organization of the classroom:*** direct teaching; teacher as a facilitator in student's investigation; individual student work, small group work, whole class discussions
- ***Teacher comfort with mathematics content***
- ***Presentation and organization of curriculum materials***
- ***Validity for parents***







treatment of these issues

-  is a standards-based, problem-solving curriculum emphasizing practice of basic skills.
-  is aligned with major states' standardized tests. Opportunities for ongoing assessment are suggested in the teacher notes.
- There is an ample use of manipulatives and very little calculator use in .
- A multi-layered structure of lessons allows for engagement of students of different ability levels in the same activity.



treatment of these issues (continued)

-  supports a variety of teaching styles and classroom structures, including whole class discussions, individual student work, small group work, direct teaching, and teacher as a facilitator in student investigations.
-  facilitates communication with parents.
-  has a spiral structure.
-  helps teachers as well as their students to learn rich mathematical content and increase their interest and curiosity in mathematics.

Features of that make it content rich for students and teachers

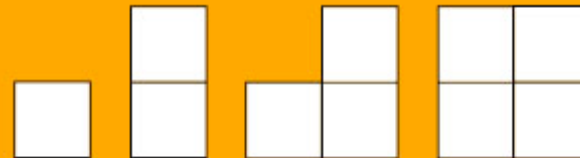
- **Multiple models for operations, place value, and other important concepts**
- **Word problems**
- **Practice that is more than practice: finding patterns and using logical reasoning to justify hypotheses(inductive and deductive reasoning)**
- **Use logical reasoning to solve problems and to check answers**

Examples of headline problems

- **Harry had one more book than Ruth. Extend the story.**
- **Bill spent 2 cents. If he had $__¢$, he has $__¢$ left.**
- **Mary and Bill each had the same number of books. Draw a sketch to fit.**
- **Tell a story that fits the headline: $6 < \blacksquare$**
- **Can you have exactly 23¢ with 5 coins? 6 coins? 14 coins? ...**
- **Two boys and 3 girls divide a pie evenly. Draw a picture.**

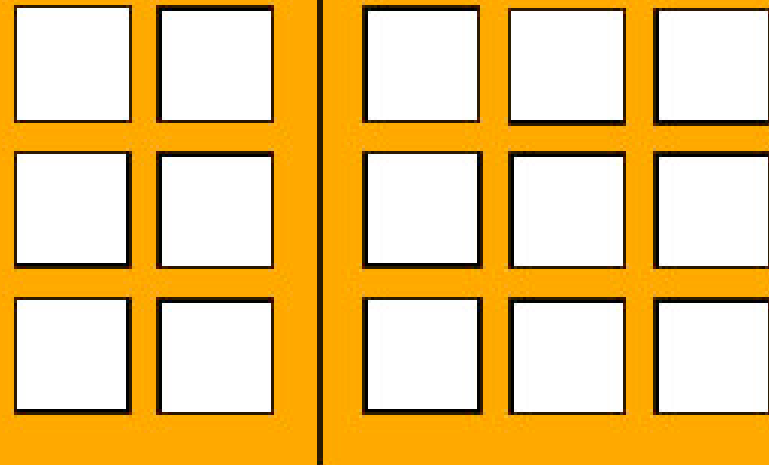
Headline problems (continued)

- In how many ways can we arrange 12 cans in columns and rows?
- Write a number sentence that fits: Mary needs one dozen cookies if she and her 5 guests are to have ___ cookies each.
- Which number does not belong with the others: 5, 18, 25, 15, 10, 35?
- Tell a story suggested by the sketch:




Headline problems (continued)

- **Write at least four number sentences which describe this picture:**



- **Extend this design:**



**Features of  that
make it content rich for**

students and teachers

- **Foreshadowing and development of algebraic ideas from the early grades on**
- **Mathematical connections showing underlying mathematical structure**

Features of the Teacher Notes that support PD

- **The Math behind It**
- **Notes about the Lesson Design**
- **Possible Discussions, Common Misconceptions**
- **Options for Different Students' Learning Styles**
- **Ways to Include These Ideas in Other Parts of Your School Day**
- **Opportunities for Ongoing Assessment**
- **Language and Notation**
- **Suggestions for the Teachers' Discussion Group**

Want to be a field test site?

- **Schedule:**

 - K, 1, 2 begin September 2003**

 - 3, 4, 5 begin September 2004**

- **Each school can choose to have the whole team or just a few teachers to be involved.**
- **The project will provide the curriculum materials and collect teachers' feedback.**