

# Classroom Leadership

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Improving Achievement in Math and Science

## Building Confidence and Competence

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Effective mathematics education requires that children use higher-order levels of thinking and problem solving. And those children must learn early how to cope with everyday situations that demand the use of mathematical concepts, such as interpreting quantitative information, estimating, performing calculations mentally, and developing an intuitive knowledge of measurement and spatial relationships.

Here, I share some simple activities that I use to ensure my young children acquire the skills that will help them become mathematically confident and competent.

### Problem-Solving Activities

Children can be introduced to most mathematical concepts through problems that come from their worlds. For example, suppose a group of 4th grade students wants to find out whether there are more boys or girls in a 2nd grade class. To solve this problem, the students will need to learn how to gather information, record data, and accurately add several numbers at a time.

The following are a few more examples of problems students view as pertinent to them:

- David had 19 balloons. Eight of them were red, four were blue, two were yellow, and the rest were green. How many were green? Draw an illustration and solve.
- Ebony had \$3.00. She bought a hot dog for \$1.35, chips for 35 cents, and a can of pop for 85 cents. Did she have enough money? Did she have money left over? If so, how much?
- Brandy mailed 3 packages and the postage on each one was \$2.65. The postage on a fourth package was \$4.37. What was the total she spent on postage?

### Measuring Up

Measurement is one of the most widely used applications of mathematics. It brings together geometry and number and enables students to use tools and techniques to compare objects, count units, and make connections between spatial concepts and number.

The following are some simple but effective measurement activities:



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- Have students compare shoes by placing their shoes beside their teacher's and their classmates' shoes to determine which shoes are the shortest and longest.
- Ask young children to find objects in the room that are about as long as their feet or to measure the length of a table with connecting cubes.

As teachers, we should expand the geometric and spatial knowledge children bring to school through exploration, investigation, and discussion of shapes and structures in the classroom. Children should learn to represent two- and three-dimensional shapes through drawings, block constructions, dramatizations, and words. And they should explore shapes by taking them apart and creating new shapes with the pieces.

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