

Preface to Chapters on Teaching Mathematics and Science

1. Why should hands-on models be provided to young children when introducing math and science concepts? How long should hands-on models be made available to them?
2. Why is it important that young children make connections between math and their everyday experiences?
3. How much should *problem-solving* be emphasized in an early childhood mathematics curriculum? Why?

Chapter 4

1. What is the difference between counting orally and counting to find out *how many*? (p. 67-68).
2. What are the 5 *principles of counting with understanding*? Can you explain what each of them means? Can you describe activities that help facilitate the development of these principles in young children? (Tip for instructor: cooperative learning groups can be assigned to explain each of the *Activities for Children* in this section) (p. 68-70).
3. When observing young children counting, what behaviors indicate that the child has acquired the *total number* principle? (*Assessment Activity 4.1*).
4. Why is it important to provide a multitude of counting experiences for young children, especially children from lower socioeconomic backgrounds? (p. 71).
5. What does it mean to say that a child *conserves* number? What role do the concepts of *units, inequalities, and equalities* play in developing the understanding that number is conserved? (p. 71-73).
6. What is *classification*? Can you give an example of classification that can be done by a young child? What is the difference between classification and *class inclusion*? Can you give an example of class inclusion that can be done by a young child? What kinds of activities help young children to develop classification? What kinds of activities help young children to develop class inclusion? Why are classification and class inclusion important for young children learning about math? (p. 73-79).
7. What other "pre-number" activities help children to develop an understanding of number? (p. 79-87).