

Number Sense! **California Kindergarten Association**

Understanding the concept of number involves more than counting.

The teacher puts 3 dolls on the table and asks 3-year-old Ben what will happen if she gives him two more. He says there will be five – he knows there will be 5 dolls, even with two out of sight and regardless of how they are placed on the table. Joleen, a classmate, places the 2 new dolls alongside the 3, and counts from the beginning: “1, 2, 3... [pause]... 4, 5.” She has to count them lined up to answer. Ben and Jolene both answered correctly, and both can count to five. But they represent two different stages of understanding.¹



Young children must have a firm grasp of number concepts. They need many opportunities to count, manipulate and rearrange objects, talk about number and quantity, and listen to stories about numbers. To help children develop mathematical understanding, preschool teachers should increase the amount of time and the quality of learning experiences with numbers (see November 2012 Curricular Theme, “Setting the Stage for Mathematics Reform.”). Kindergarten teachers should provide lessons based on children’s experiences and then expand on these. First grade teachers should ensure lessons on abstract concepts follow concrete experiences.

Summary of Children’s Development of Number Concepts: The California Preschool Information Networks offers the **Counting Learning Trajectory** which lists the stages of counting that is typical of most young children. [Click here](#) for the chart. This Number Sense Curricular Focus related to Principal #9 of [Developmentally Appropriate Practice](#), as developed by the National Association for the Education of Young Children.

¹ *Math Matters: Children’s Mathematical Journeys Start Early.* The report is available at www.earlymath.org.

Research for CKA Members:

- [“Does Mathematics Instruction for 3- to 5-Year Olds Really Make Sense?”](#) by Arthur J. Baroody: He summarizes recent research on number and arithmetic skills and offers recommendations on how best to teach mathematics to young children. While CKA could not obtain the final published version of the article from the author or online, this final pre-publication version is still helpful to understand what mathematics instruction is appropriate for young children. [Click here](#) for the article.
- Belle Akers, 1st grade teacher, Convent of the Sacred Heart Elementary – [“Exploring Math Concepts with Children's Books”](#) -- One great way to offer experiences with numbers is through literature books. This research article, published by CKA in Spring 1997 with newly written Study Guide Questions, suggests various books with activities associated with each one. In order to access this article, you will need to enter your CKA Member User Name and Password.

Lesson Plans & Activities

- [Preschool](#)
- [Transitional Kindergarten](#)
- [Kindergarten](#)
- [First Grade](#)



Resources

- [Preschool Foundations for Learning](#) – The mathematics section from the Preschool Foundations may be found [here](#).
- [Mathematics in the TK Classroom PowerPoint](#) – This PowerPoint developed by Preschool California is important for teachers of preschool, TK and kindergarten.
- [Common Core State Standards related to Number Sense](#)
- Dr. Jean Feldman’s “Totally Math” handout from the California Kindergarten Conference in 2012 -- Learn how to introduce key math concepts in your classroom in creative and meaningful ways. “Math fever” will spread through your room in the coming year with the catchy tunes, games and movement ideas you will learn! To access, [click here](#), go to the Math tab and enter your CKA Member User Name and Password.
- [Professional organizations](#) that support mathematics instruction and assessment.
- [Letter of introduction](#) to parents.

- Lakeshore posters – Hang this kindergarten poster over your math center and visitors will immediately see your teaching goals. [Click here](#) for the poster.
- [Print & web resources](#) on mathematics.

Video: On these videos you will find learning activities that integrate language and mathematical learning in a way that is engaging, educational and easy to implement.



- **PBS Kids** offers the following videos helpful for early mathematics understanding.
 - <http://pbskids.org/lab/activity/nametowers/>
 - <http://pbskids.org/lab/activity/shoesorting/>
- **Preschool California** offers three videos from Long Beach USD for teachers of Transitional Kindergarten.
 - [TK Math Video One](#): TK students are adding the number of letters in their names.
 - [TK Math Video Two](#): TK students are learning to sort and categorize numbers.
 - [TK Math Video Three](#): TK class is participating to provide information for one graphing chart.
- **Teaching Channel** - For short video examples of good mathematics teaching, go to the Teaching Channel at www.teachingchannel.org/. Here is one of their latest videos, "[Let's Count! Learning Numbers in Multiple Ways](#)".