



Connecticut Early Learning  
and Development Standards

Transcript for the [video](#):

## ***Supporting Mathematical Development in Young Children: Number Operations***

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**Narrator:** For young children, number operations, or the ability to manipulate numbers, can be a complex skill. It requires recognizing groups and understanding that numbers can be combined or taken apart. This is a gradual process and requires varied experiences and adult support.

**Dr. Sudha Swaminathan, Eastern Connecticut State University:** Young children—toddlers—demonstrate their ability to problem solve with numbers when they ask for more, when they're able to determine who has more, or realize if they gave a bit to someone else, they would have less. These are beginning abilities in number operations. As children get older, they realize that adding one more piece to a group increases the total quantity by one.

**Child:** But if you put one in the middle that makes five!

**Dr. Sudha Swaminathan:** They start to use this ability in their day-to-day routines, during play. When, for instance, if they're playing a board game, they realize that, "Hey, I rolled one more than you. I'm gonna go further in the board game than you did." So, they start to make these connections.

**Child:** I got six. You not gonna catch up.

**Dr. Sudha Swaminathan:** These things, which are very perceptual, tactile, game-oriented, make them start to recognize groups. And they realize that if I were to add a group of two to three, I get five.

**Dr. Sudha Swaminathan:** Originally, children count the whole set of quantity. But gradually, they start to see that numbers have subgroups within them, and that these subgroups can be combined.

**Child:** What about if we put these ones together, then they will make a different number.

**Dr. Sudha Swaminathan:** We want that to come naturally from their experiences and from their interactions with the environment.

**Teacher:** How many friends are at home?

**Children:** Three.

**Teacher:** And Jared will come back, so then that leaves how many friends at home?

**Child:** Two.

**Teacher:** Two.

### **How Do You Help Children use Number to Solve Problems? (2:25)**

**Narrator:** Adults can support children’s development of this skill throughout the day.

### **Supporting Math during Routines (2:35)**

**Narrator:** Daily routines provide opportunities to combine numbers in meaningful ways.

**Teacher:** (singing)

*Five and three make eight,*

*Five and three make eight,*

*Five and three make eight,*

*Eight friends at school.*

Let’s count the boys, one, two...

### **Integrating Math Learning in Play (2:56)**

**Narrator:** While children are playing, adults can use “math talk” to describe their actions.

**Child:** Two.

**Teacher:** Two poles, and one more pole.

**Teacher:** Two poles and then you can get another one and we’ll have three poles.

### **Explicitly Teaching Math Concepts (3:17)**

**Narrator:** Adults can provide concrete objects and prompt children to add and subtract small numbers.

**Teacher:** Very good. She took three away and left two.

**Dr. Sudha Swaminathan:** Number operations are an important aspect of problem solving. When children are determining if they have enough, who won in a dice game, or how many

children in their class want to do one activity versus another, they're going to be counting, determining the quantity, and they're engaging in a variety of problem-solving exercises.