



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.