15-minute In-service Suite: Math: Number Recognition and Subitizing

Narrator: Welcome to this presentation of the 15-minute in-service suite on number recognition and subitizing. This 15-minute suite highlights the development of this important math competency that is the foundation of math learning later in a child's life. This suite provides strategies that support number recognition and subitizing for children birth to age 5.

Math is a part of what you do every day as you work with young children and their families.

Woman: You don't even have to count it. My goodness. You really can count well.

Narrator: Children's success with mathematics depends on their developing number sense development. This includes interest, understanding, and, yes, even love of numbers. It begins when teachers and families support children's ability to recognize and eventually subitize numbers.

The Framework for Effective Practice or House Framework helps us think about the elements needed to support children's preparation and readiness for school. The elements are the foundation, the pillars, and the roof. When connected to one another, they form a single structure that surrounds the family in the center, because as we implement each component of the house, in partnership with parents and families, we foster children's learning and development.

Research-based curricula and effective teaching practices include supports for number recognition and subitizing. And just as the house needs a solid foundation, so does mathematics. Number recognition and subitizing provides that foundation.

This presentation on number recognition and subitizing is one in a series of modules designed to help adults support young children as they learn positive behaviors, develop skills in STEAM, math, and writing, and engage in dramatic play.

So, what do we know about how children develop skills in number recognition and subitizing? First, infants and toddlers begin showing number recognition and subitizing by paying attention to how many things there are...

Woman: One. Sophia, can I have one cracker, please? Thank you.

Narrator: ...like picking up one small toy in one hand and then picking up another toy in the other hand. They also begin to use a few basic words related to quantity, like "more," "all done," and the numbers 1, 2, and 3.

Research shows that very young children are sensitive to numbers and naturally compare small and large sets of objects during the first years of life. Preschoolers develop math skills that allow them to recognize the number of objects without counting. And when they can do that fluently, that is, when a child can look at dots and quickly say how many there are, this skill is referred to as subitizing.

The word "subitizing" comes from the Latin word for "sudden." Many teachers and parents have not learned about number recognition and subitizing, despite how important they are to mathematics development. These skills influence mathematics learning throughout the lifetime, especially within the years from birth to 5.

For example, the learning trajectory of children from birth to 5 shows us that infants and toddlers can first quickly see and name the number of objects in small groups. As children approach the preschool years, they can do the same thing for objects in a group with larger numbers. It's important for teachers and parents to help children by noticing and naming small numbers throughout the day. Adults can incorporate numbers and subitizing into their daily interactions during routine tasks, such as mealtime...

Woman: How many scoops are you gonna get? Two. Very good.

Narrator: ...or engaging in children's free play.

Woman: Okay. 1...2...3...4...5. Go!

Girl: Go!

Woman: Yay! 1...

Narrator: Teachers and parents can provide children with opportunities to learn numbers and subitize. Examples of this practice include labeling the number of Cheerios an infant has on his plate or by asking each toddler to pick up two blocks from the carpet or by naming how many puzzle pieces a preschooler is playing with.

Once you begin to notice and take advantage of these opportunities, you can build children's number sense with little or no extra effort. Naming numbers is just part of the way we talk to children everywhere, all day, and all year.

We hope you have new ideas about how you can support children's interest, engagement, and mathematics development. For more information and more ideas, see the complete 15-minute suite on number recognition and subitizing. And take a look at our tips and tools and helpful resources.