

Back to the basics

Sarnecka and Cognitive Development Lab awarded grant from NIH to study early childhood learning

As adults, we all know the meanings of number words like "one" and "two". But where do we really get the concepts for one, two, and three? Are they something we're born knowing or something we learn along the way?

For answers, cognitive sciences assistant professor Barbara Sarnecka and her team of researchers (pictured at right), equipped with a newly awarded \$152,000, two-year grant from the National Institute of Health, are getting back to the basics in pre-school classrooms throughout the Irvine community.

Working with children from one to four years old, Sarnecka's research team directs different educational games in which the youngsters perform cognitive tasks such as counting different objects and grouping them into different boxes. The goal: to determine how and when children get number concepts.

"Children learn to count at a very young age," says Sarnecka, "but the conceptual understanding of what the number words actually mean comes later." By studying the learning progress of their young subjects, she hopes to better understand how and when the proverbial "light bulb" of understanding number concepts turns on.

"By studying how we think and how our concepts are encoded in language, we may better understand what 'normal' developmental progress looks like," says Sarnecka. "If we know what 'normal' is, then we can also identify what is 'abnormal' and begin to find new ways to accommodate these developmental abnormalities."

In the case of number concepts, this could mean identifying new ways to teach math to those who are unable to comprehend the meaning or concepts of numbers or groupings.

