



Tired parents may think their baby has nothing more on his mind than food and sleep, but an infant actually has sophisticated cognitive abilities. Since a baby can't yet verbalize what's he's thinking about, however—a frustration for many a parent—researchers have to get creative to study infant cognition. Feigenson has shed light on many fundamental processes of human cognition and memory by teasing out the limits on what infants and children are able to understand about numbers and the processes that underlie that understanding. She demonstrated, for instance, that infants aged 12 to 14 months can differentiate between one, two and three objects but not four. Feigenson did this in several ways, including by giving babies a choice of containers that held a number of crackers; the infants would crawl toward the container with the most crackers when the choice was between one and three, for instance, but not between one and four. Further experiments showed that the limit of three could be overcome by grouping the objects in small sets, allowing infants to remember groups of up to eight objects. This is similar to what adults do to boost their memory, such as breaking up a phone number into three sets of digits. Other experiments revealed early mathematical abilities, such as that children aged as young as 3 years, who have not yet received any formal math education, can do simple algebra without instruction. With experiments such as these, Feigenson and colleagues have illuminated some of the fundamental cognitive abilities that are in place early in life, which are subject to change as children learn through further experience.

