Stages of Math Development

Stage 1. Children begin to understand the use of numbers as they hear other people using them and they also begin to understand the use of numbers through exploration, such as, working large-piece puzzles; they begin to understand direction- and relational words like on/off, here/there; up/down; they recognize simple geometric shapes like a circle and can sequence up to three items (2 to 3 year olds).

Stage 2. Children recognize and express quantities like "some," "more," "a lot," and "another"; they begin to acquire a sense of time; recognize familiar geometric shapes; they sort objects by one characteristic; they rote count to five; they notice and compare similarities and differences; they recognize simple patterns and use words to describe quantities like length (long/short), size (short/tall), and a lot, a little, big and small (3- to 4-year olds).

Stage 3. Children understand number games; count objects to 10 and sometimes to 20; they identify the larger of two numbers; answer simple questions that require logic; understand 1-to-1 correspondence up to 10; they recognize a penny and a nickel; combine whole numbers up to 10; make computational estimates in real-life situations; they recognize complex patterns, use position words, sort forms by shape, sort objects by one or two attributes; they identify a circle, a square, and a triangle; they compare sizes of familiar objects not in sight and work multi-piece puzzles (4- and 5-year olds).

Stage 4. Children begin to understand that concepts can be represented symbolically; they can combine simple sets, add small numbers in their heads, rote count to 100 with little confusion, count objects to 20 or more; they understand that a number is a symbol that represents a certain number of objects; understand 1-to-1 correspondence; recognize that two parts make a whole; count by 5's and 10's to 100; count backwards from 10; they use non-standard and standard measuring tools; recognize, describe, extend, and create a variety of patterns; use patterns to predict what comes next; sort and classify real objects or pictures by multiple attributes; and they can decide which number comes before or after a second number (5- and 6-year olds).