# Children's Math Development

Here's a quick look at how young children develop math skills, age by age.

| | A 2-YEAR-OLD CHILD IS LEARNING TO… | A 3-YEAR-OLD CHILD IS LEARNING TO… | A 4-YEAR-OLD CHILD IS LEARNING TO… | A 5-YEAR-OLD CHILD IS LEARNING TO… |
|---|---|---|---|---|
| **NUMBER CONCEPTS AND RELATIONS**  | • say several number words, but not always in order<br>• understand the meaning of the numbers 1 and 2<br>• take or give one or two objects when asked<br>• understand when one collection has more than another | • count up to 5<br>• understand that the words one, two, three represent a quantity<br>• begin to identify the first and last objects in a sequence<br>• recognize a few numerals | • count up to 10<br>• begin to represent counting through drawing and writing<br>• describe relative order using the words first, second, last and may identify the third in a sequence<br>• read numerals up to 5 | • count up to 20 and count backward from 5, possibly 10<br>• determine without counting the larger of two numbers up to 10<br>• understand sequential order of first, second, third… up to tenth.<br>• read and write one-digit numerals up to 9 |
| **NUMBER OPERATIONS**  | • know that adding or subtracting an object from a collection changes it<br>• know parts and wholes of a collection and recognize that adding to her collection is positive (more!) and taking away is negative<br>• understand that the parts of a group can be combined in different ways but can't verbally express this | • say the number that results from adding or subtracting one from a group of up to three objects<br>• understand that the whole group is bigger than the parts, when he sees a group of five or more objects in a group, although he can't quantify the exact number without counting | • add one to three objects to a group to make up to four, and figure out how many objects there are all together<br>• subtract one to three objects from a group and figure out how many are left<br>• find different ways of making a group (e.g., 2 + 2 and 3 + 1 both = 4) | • model and solve simple addition and subtraction word problems up to five by using an informal strategy such as counting to recognize how many are all together or left over<br>• name the parts of a whole up to five or more; or, given the parts, name the whole (e.g., 5 = 1 + 4 and 2 + 3) |
| **GEOMETRY AND SPATIAL SENSE**  | • match two identical shapes<br>• understand some spatial words such as top and bottom and follow directions using these words | • name a few basic 2D shapes (e.g., circle, square, triangle)<br>• understand words that describe placement of objects in relation to others (e.g., in front of, behind) | • begin to recognize and name basic shapes when they are presented in different sizes, orientations, or proportions<br>• name the parts of shapes (sides, angles) and make shapes from parts<br>• use position words to describe location (e.g., over, under, behind), direction (e.g., up, down), and distance (e.g., near, far) | • name a few basic 3D shapes (e.g., cone, cylinder, sphere, cube)<br>• recognize familiar shapes and other shapes such as hexagon, rhombus, trapezoid<br>• understand that a shape is still the same shape if you make it larger or turn it<br>• create new shapes by combining other shapes<br>• eventually begin to create and use simple maps to find objects |
| **MEASUREMENT AND COMPARISON**  | • make simple comparisons between two objects (e.g., small/big, short/tall, more/ less)<br>• recognize when one object is bigger than another | • start to compare two objects in more specific ways such as height, length, weight<br>• figure out which object is taller or longer with some difficulty when lining them up side by side | • compare a small collection of objects based on different attributes (e.g., length, size, weight) and put them in order<br>• use language such as small/big and eventually big, bigger, biggest<br>• use informal units of measurement and become familiar with standard measuring tools (e.g., scale, ruler) | • make informal comparisons and estimates<br>• lay objects end to end to accurately measure the length of an object<br>• use measurement words and some standard measurement tools accurately |
| **PATTERNS**  | | • recognize simple repeating AB patterns (e.g., horse, duck, horse, duck, horse, duck)<br>• say a pattern aloud while looking at it | • extend and fix a repeating AB pattern by filling in the missing part (e.g., circle, triangle, circle, triangle, ___ , triangle)<br>• duplicate a repeating AB pattern from a model | • extend and fix more complex repeating patterns, such as ABB or ABC patterns |