Math Skills: What to Expect at Different Ages

Children develop at their own rate, but you can generally expect them to meet certain milestones. Take a look at how kids build math skills throughout the years.

Babies

- Begin to predict the sequence of events (running water means bath time)
- Start to understand basic cause and effect (shaking a rattle makes a noise)
- Begin to classify things in simple ways (some toys make noise and some don't)
- Start to understand relative size (baby is small, parents are big)
- Begin to understand words that describe quantities (*more*, *bigger* or *enough*)

Toddlers

- Understand the "how many" of basic numbers, such as using their fingers to show "how many" years old they are
- Begin reciting numbers, but skip some of them
- Understand basic math language, such as how objects relate to each other (*under*, *behind*, *fast* and *heavy*)
- Match basic shapes (triangle to triangle or circle to circle)
- Explore measurement by filling and emptying containers
- Start seeing patterns in daily routines and in things like floor tiles

Preschoolers

- Recognize shapes in the real world
- Start sorting things by color, shape, size or purpose
- Compare and contrast using classifications such as height, size or gender
- Count up to at least 20 and accurately point to and count items in a group
- Understand that numerals stand for number names (5 stands for *five*)
- Use spatial awareness to put puzzles together
- Start predicting cause and effect (such as what will happen if they drop a toy in a tub full of water)

Kindergarteners

- Add by counting the fingers on one hand—1, 2, 3, 4, 5—and starting with 6 on the second hand
- Identify the larger of two numbers and recognize numerals up to 20
- Copy or draw symmetrical shapes
- Start using very basic maps to find a "hidden treasure"
- Begin to understand basic time concepts like *morning* or days of the week
- Follow multi-step direction words like *first* and *next*
- Understand the meaning of words like *unlikely* or *possible*

First and Second Graders

- Predict what comes next in a pattern and create own patterns
- Know the difference between two- and three-dimensional shapes and name the basic ones (cubes, cones, cylinders)
- Count to 100 by ones, twos, fives and tens
- Write and recognize the numerals 0 to 100, and the words for numbers from one to *twenty*
- Do basic addition and subtraction up to 20
- Read and create a simple bar graph
- Recognize and know the value of coins

Third Graders

- Move from using hands-on methods to using paper and pencil to work out math problems
- Work with money
- Do addition and subtraction with regrouping (also known as borrowing)
- Understand place value well enough to solve problems with decimal points
- Know how to do multiplication and division, with help from fact families (collection of related math facts, such as 3 x 4 = 12 and 4 x 3 = 12)
- Create a number sentence or equation from a word problem

Fourth and Fifth Graders

- Start applying math concepts to the real world (such as when helping you cook)
- Practice using more than one way to solve problems
- Put different types of numbers in order on a number line
- Compare numbers using > (greater than) and < (less than)
- Start two- and three-digit multiplication (312 x 23)
- Complete long division, with or without remainders
- Estimate and round

Middle-Schoolers

- Begin basic algebra with one unknown number (such as 2 + x = 10)
- Use coordinates to locate points on a grid, also known as "graphing ordered pairs"
- Work with fractions, percentages and proportions
- Work with lines, angles, types of triangles and other basic geometric shapes
- Use formulas to solve complicated problems and to find the area, perimeter and volume of shapes

High-Schoolers

- Understand that numbers can be represented in many ways (fractions, decimals, bases and variables)
- Use numbers in real-life situations (such as checking accounts or calculating tips)
- Begin to see how math ideas build on one another
- Begin to understand that some math problems don't have real-world solutions
- Use mathematical language to convey thoughts and solutions
- Use graphs, maps or other representations to learn and convey information

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