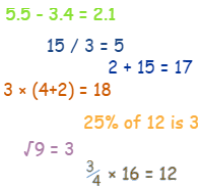
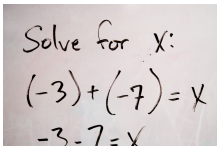
Skills Your Child Needs for Different Math Subjects

By Brendan R. Hodnett, M.A.T.

Geometry. Algebra. Statistics. Different types of math require different skills. A child's ability to do well in certain math classes may vary, depending on their specific areas of strength and weakness.

A number of learning and attention issues can cause trouble with math, including dyscalculia. And some kids have more than one issue causing math difficulties. Knowing what skills are needed for each type of math can give you insight into where your child might struggle and where they might find success.

Type of math	Skills involved	Who might struggle or benefit
Arithmetic 	• Understanding numerical values and basic math symbols (like the = sign) • Doing numerical operations (addition, subtraction, division, multiplication) • Being able to recall math facts • Comparing numbers and place value • Estimating • Understanding language like *sum*, *product*, *difference*, *quotient*	**Who might struggle:** Kids with dyscalculia often struggle to understand numerical values (number sense) and concepts like greater than/less than. Kids with ADHD and working memory issues may have trouble remembering math facts and step-by-step procedures. **Who might benefit:** Kids who have an easier time grasping math concepts like numerical values, number comparisons (such as greater than, less than or equal to), and calculations.
Algebra 	• Understanding symbolic representations, like variables • Understanding order of operations and inverse relationship between operations • Graphing on a coordinate plane • Recognizing patterns • Factoring, simplifying	**Who might struggle:** Kids who struggle with written expression may find the use of symbols and variables to be confusing. Kids with visual processing issues may reverse numbers. This can make it hard to write and solve equations. For kids with dysgraphia and dyspraxia, trouble with handwriting and copying can lead to errors in multi-step algorithms. **Who might benefit:** Kids who struggle with number concepts may find it easier to represent relationships with linear graphs or solve equations with the use of a calculator. (They still need those concepts in algebra, however.) At the same time, negative numbers and fractional values that are common in algebra can be a source of frustration for these students.

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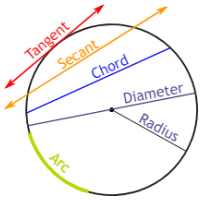
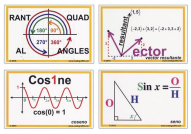
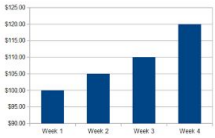
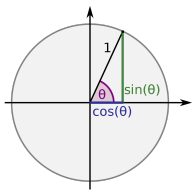
Geometry 	• Recognizing shapes • Understanding geometric properties like symmetry • Measuring shapes • Using geometric vocabulary • Doing shape transformations, like rotations	**Who might struggle:** Kids with language issues may struggle with the increased math vocabulary in geometry. And kids with visual-spatial difficulties may have trouble with the highly visual nature of geometry, including recognizing and manipulating shapes. **Who might benefit:** Kids who have an easier time with visual representations and vocabulary than with number concepts. But if these kids have trouble with measurement and direction, geometry could be frustrating. The same is true for kids with poor spatial skills, visual-spatial working memory and visual-spatial short-term memory.
Pre-calculus / Calculus 	• Factoring • Graphing functions • Simplifying expressions • Using graphing calculators • Understanding abstract concepts, such as the limit of a function • Understanding symbolic and visual representations	**Who might struggle:** Kids who had trouble with algebra often struggle with calculus, too. Calculus can also be hard for kids who struggle with abstract thinking, such as figuring out which formula could best solve a problem. **Who might benefit:** Kids who enjoy solving problems in a methodical, organized way. That's because calculus is often taught using a systematic (step-by-step) approach.
Statistics 	• Collecting and organizing data • Solving for and using percentages • Reading and graphing data • Simulating data collection	**Who might struggle:** Kids who struggle with fractions and percentages and with comparing values may have a hard time with statistical analysis. Kids who struggle with executive function, like kids with ADHD, may have trouble creating a plan to simulate random data collection and organizing the data. **Who might benefit:** Even though kids with ADHD can struggle with the planning aspect of statistics, they might be more engaged and motivated in a statistics class than in other math classes. That's because statistics is more connected to real-world situations.
Trigonometry 	• Graphing functions • Solving proportions • Using the properties of triangles / circles to solve problems • Understanding symbolic and visual representations	**Who might struggle:** Kids who struggle to make sense of diagrams. It can also be difficult for kids who have trouble remembering the many properties and large vocabulary of trigonometry. **Who might benefit:** Kids who benefit from a step-by-step approach. They may have an easier time seeing similarities from one problem to the next.