

# BUILDING BASIC SKILLS

## *for Success in Algebra*

Learning is a continuous process. Each new skill that a child learns becomes a stepping stone to the next skill. It is important that children master the necessary skills in each subject matter before progressing to higher level classes. Without strong fundamentals in reading and math skills, students will struggle to achieve their goals in other subject areas—especially higher level math courses like algebra. Prepare your child for success in school by ensuring he or she has mastered the basics.

### Reading

Reading is the foundation of learning and is the cornerstone of success in other subjects like science and math. There are several strategies and skill components to reading that a child must learn in order to become an effective reader.

Reading starts when a child learns the letters of the alphabet and distinguishes differences in sounds and words, or phonemic awareness. For a student to read effectively, there are twelve phonics skills that must be mastered.

Children must also build a solid sight vocabulary. The ability to instantly recognize frequently used words such as “house”, “thank” and “said” helps children increase accuracy and fluency in reading. Once a child is able to recognize words by sight, he or she can concentrate on building vocabulary skills by understanding words in conversation and learning new words while reading.

Comprehension, the ability to derive meaning from what we read, is learned by practicing finding information, getting the main idea, detecting the sequence and drawing conclusions.

Mastery and application of phonics, vocabulary and comprehension skills will enable a child’s success in any curriculum area.

#### **Grade equivalent skills to be mastered by the end of a reading program:**

- Phonics Skills
- Sight Words
- Receptive Vocabulary
- Functional Vocabulary
- Comprehension
- Reading Rate

### Basic Math

With a strong foundation in reading, a child will be prepared to learn and understand math concepts. Math is comprised of two critical skill areas: computation and concepts and applications. Basic math computation or simple addition, subtraction, multiplication and division is the core of math and the basis for solving concept and application-based story problems. These two skill areas coupled with reading skills ensure a child’s success in basic math classes.

Basic math is truly a sequential process. Students must learn skills in a particular order and it is imperative that they don’t move on to another skill until the previous skill is mastered. This process will also give the student confidence in his or her ability to apply these skills to higher level math such as pre-algebra and algebra.

#### **Grade equivalent skills to be mastered by the end of a basic math program:**

- Basic Math Facts
- Numeration
- Whole Number Operations
- Fractions
- Decimals
- Integers
- Measurement
- Geometry Basic Skills
- Problem Solving
- Interest
- Probability
- Percentages

## Pre-algebra

After students master basic math skills they can move on to pre-algebra. Pre-algebra is considered to be the “in-between” stage for basic math and algebra. Pre-algebra provides students with the opportunity to obtain a higher level of mastery and application of skills such as fractions, decimals, integers and percentages. This is when students really start learning and applying basic knowledge of simple variables, equations and exponents. If students are struggling with mastery of these skills, it will be virtually impossible for them to tackle algebra.

Much like basic math, pre-algebra requires a lot of practice and repetition within lessons and activities. It is also important for children to use tangibles or manipulatives in order to completely understand and apply specific skills—especially in grasping abstract concepts. It is crucial that a student master pre-algebra before entering an algebra program.

### Grade equivalent skills to be mastered by the end of a pre-algebra program:

- Integers
- Equations
- Factors and Fractions
- Rational Numbers
- Ratio, Percent and Proportion
- Equations and Inequalities
- Functions and Graphing
- Right Triangles
- Two-Dimensional Figures
- Three-Dimensional Figures
- Statistics and Probability
- Polynomials and Non-linear Functions
- Variables
- Exponents and Powers

## Algebra

Algebra is perceived as the number one curriculum subject in which most students struggle. However, problems in algebra courses are most likely due to learning gaps in other skill areas that were not previously mastered.

Once the basic skills are mastered, one of the most important areas to tackle in algebra is problem solving. In order to solve an algebraic word problem, the language must first be translated into algebraic expressions. This requires a solid understanding of basic reading, math and pre-algebra. If a student has completed and mastered basic skills and has a solid understanding of pre-algebra concepts, they can truly excel in learning algebra.

### Grade equivalent skills to be mastered by the end of an algebra program:

- Algebra Language
- Real Numbers
- Linear Equations
- Linear Inequalities
- Polynomials
- Factoring
- Quadratic Functions
- Exponential Functions
- Rational Equations
- Radical Expressions
- Statistics
- Probability

**Reading, basic math and pre-algebra are truly the building blocks for success in algebra. Each plays a major role in a student’s success in school, algebra, higher level math and in life!**

Mastery of Reading + Mastery of Basic Math + Mastery of Pre-algebra =

**Success in Algebra**