

# Math

## What Every Child Should Know 3rd Grade

In 3rd grade, your child will learn important new ideas and gain important new skills. One of the most important topics this year is multiplication and division. Another is fractions. Multiplication, division, and fractions are the building blocks for many life skills that students will learn in later grades, such as percentages. Students also need to master these topics to be ready for algebra and advanced math, so it is essential to get a good start with these topics in 3rd grade.

- Developing understanding of multiplication and division and strategies for multiplication and division within 100.
- Developing understanding of fractions, especially unit fractions (fractions with numerator 1).
- Developing understanding of the structure of rectangular arrays and of area;
- Describing and analyzing two-dimensional shapes.

### ***Talking To Your Child's Teacher***

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 3rd grade, these include:

- Multiplication and division
- Fractions

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track?

How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

### ***Help Your Child Learn At Home***

Learning does not end in the classroom. Children need help and support at home to succeed in their studies.

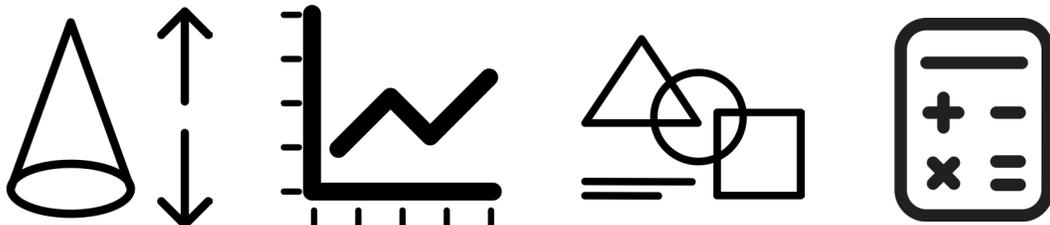
- Try to create a quiet place for your child to study, and carve out time every day when your child

can concentrate on reading, writing, and math uninterrupted by friends, brothers or sisters, or other distractions.

- You should also try and sit down with your child at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your child is working on, and it will help you be the first to know if your child needs help with specific topics.

By taking these small steps, you will be helping your child become successful both in and outside the classroom. Look for "word problems" in real life. Some 3rd grade examples might include:

- Notice those everyday occasions when you find yourself using your times tables — such as to determine how many days there are in four weeks. Ask your child for the answer.
- Involve your child when you notice yourself using division to "work backward" in the times tables — such as determining how many candies each child will get if 36 candies are shared equally among nine children at a party, or determining how many six-inch lengths can be cut from a string 18 inches long.



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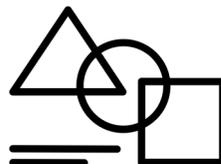
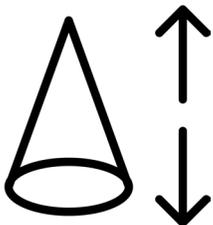
## What Every Child Should Know 3rd Grade

### *Educating for citizenship in today's world*

Within a society whose structures are largely mathematical it is important that citizens be educated in the methods of mathematics: first in terms of general numeracy but also in terms of understanding mathematics as a discipline which has formatting power in society. Teaching students to identify and pose problems, to explain themselves in terms others can understand and to question the invisible structures of mathematics is key to developing informed, active and critical citizens. Mathematics has a role in citizenship education because it has the potential to help us understand our society and our role in shaping it.

#### ***Skills employers look for:***

- ★ Ability to work in a team
- ★ Ability to make decisions and solve problems
- ★ Ability to plan, organize and prioritize work
- ★ Ability to relate math with the real world
- ★ Ability to obtain and process information
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# Math

## What Every Child Should Know 4th Grade

In 4th grade, your child will gain important new skills while continuing to build on what he or she learned the previous year. One of the main areas studied in 4th grade is arithmetic and applying it to solve problems. This is an important life skill, and your child should make significant strides in this area during the year. Your child will also build knowledge and skills with fractions to prepare for mastering this topic in 5th and 6th grades. These skills will help ensure your child is ready for algebra and advanced math. In Grade 4, instructional time should focus on three critical areas:

- Developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends.
- Developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators and multiplication of fractions by whole numbers.
- Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

### ***Talking To Your Child's Teacher***

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 4th grade, these include:

- Doing arithmetic and solving word problems with multi-digit numbers
- Doing arithmetic and solving word problems with fractions

Ask to see a sample of your child's work. Ask the teacher questions such as: Is this piece of work satisfactory? How could it be better? Is my child on track? How can I help my child improve or excel in this area? If my child needs extra support or wants to learn more about a subject, are there resources to help his or her learning outside the classroom?

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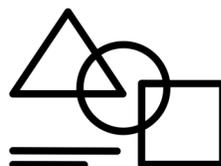
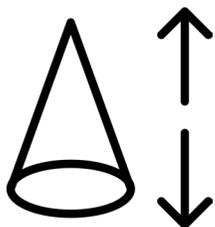
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Look for "word problems" in real life. Some 4th grade examples might include:

- Ask your child to compare numbers using phrases like "times as much." For example, if the family cat weighs 8 lbs. and the family dog weighs 56 lbs., how many times as much does the dog weigh?
- Ask your child to help you compare fractional amounts — for example, if one recipe calls for  $\frac{2}{3}$  of a cup of oil, but another recipe calls for  $\frac{3}{4}$  of a cup of oil, which recipe calls for more oil? (In 5th grade, your child will learn ways to determine just how much more oil.)



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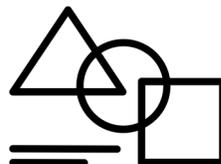
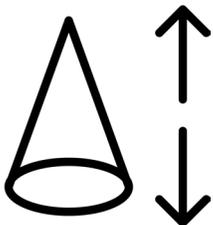
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## What Every Child Should Know 5th Grade

Fifth grade is a milestone and a pivot point for students. The classroom focus on arithmetic during the elementary grades will develop into a more formal study of algebra in middle school. To be ready for algebra, students must have an understanding of fractional arithmetic, in part because even simple equations cannot be solved without fractions. Because of this, whole-number arithmetic comes mostly to a close in 5th grade, while multiplying and dividing fractions becomes a major focus. In Grade 5, instructional time should focus on three critical areas:

- Developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions).
- Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations.
- Developing understanding of volume.

### **Talking To Your Child's Teacher**

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 5th grade, these include:

- Multiplying and dividing fractions, and solving related word problems
- Decimals (concepts and arithmetic)
- Volume (concepts and problem-solving)

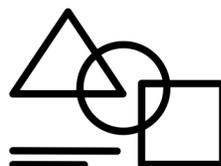
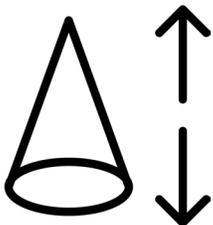
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- Doing arithmetic with decimals, for example when balancing a checkbook.
- Multiplying with fractions — for example, if you used about  $\frac{2}{3}$  of a  $\frac{3}{4}$  cup measure of vegetable stock, then how much stock did you use? About how much is left?
- Using the length, width, and depth of a garden plot to determine how many bags of garden soil to buy



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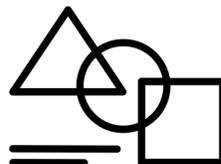
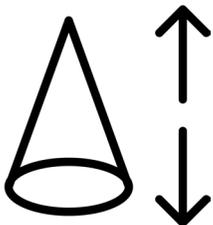
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## What Every Child Should Know 6th Grade

The skills and understanding that your child will gain during 6th grade are among the most important foundations for college and career readiness. These include working with ratios and rates and working with variables and variable expressions — the building blocks of algebra. Many of this year's topics will remain a major emphasis throughout the middle school years and into high school.

- Connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems
- Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers
- Writing, interpreting, and using expressions and equations
- Developing understanding of statistical thinking.

### ***Talking To Your Child's Teacher***

When you talk to the teacher, do not worry about covering everything. Instead, keep the conversation focused on the most important topics. In 6th grade, these include:

- Analyzing and solving problems using concepts of ratio and rate
- Working with variables and expressions
- Analyzing and solving word problems using equations

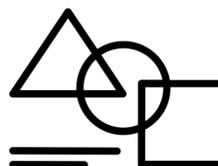
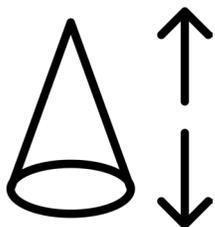
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