

Math Expectations for 5th Grade

Fifth grade is a milestone and a pivotal 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 become a major focus.

Operations and Algebraic Thinking

By the end of fifth grade your student should be able to:

- ✓ Use and understand parentheses, brackets, or braces in numerical equations
- ✓ Write equations and expressions using parenthesis, brackets, braces, and other symbols
- ✓ Create, identify, and graph two numerical patterns based on two given rules

Number and Operations in Base Ten

By the end of fifth grade your student should be able to:

- ✓ Identify the value of the digits in a multi-digit whole number
- ✓ Explain how easy it is to multiply and divide by 10
- ✓ Read and write decimals to the thousandths using numbers and expanded form
- ✓ Compare two decimals to the thousandths
- ✓ Round decimals to any place value
- ✓ Multiply multi-digit whole numbers easily
- ✓ Divide, illustrate, and explain whole numbers that have up to four digit dividends and two digit divisors
- ✓ Use a model to add, subtract, multiply, divide, and estimate to the hundredths and justify it

Number and Operations Fractions

By the end of fifth grade your student should be able to:

- ✓ Add and subtract fractions with unlike denominators (including mixed numbers)
- ✓ Add and subtract fractions in word problems
- ✓ Tell when you need to divide the numerator by the denominator to solve word problems
- ✓ Multiply fractions and whole numbers in different sequences and know they will get the same product

Number and Operations Fractions Continued...

- ✓ Find the area of a rectangle using multiplication and models
- ✓ Compare and explain when a fraction greater than one is multiplied by a whole number the product is more than the whole number, and when a fraction less than one is multiplied by a whole number the product is less than the whole number
- ✓ Multiply fractions and mixed numbers to solve problems
- ✓ Divide a fraction by a whole number
- ✓ Divide a whole number by a fraction
- ✓ Divide fractions by whole numbers and divide whole numbers by fractions in word problems

Measurement and Data

By the end of fifth grade your student should be able to:

- ✓ Convert measurements to solve multi-step problems
- ✓ Create line plots with fractions and use the information to solve problems
- ✓ Find volume using cubic units
- ✓ Measure volume by counting unit cubes, using cubic cm, cubic in, cubic ft, and other units
- ✓ Find the volume of a right rectangular prism using multiplication and models
- ✓ Use the formulas ($V = l \times w \times h$ and $V = b \times h$) for rectangular prisms
- ✓ Add the volumes of solid figures to find the total volume

Geometry

By the end of fifth grade your student should be able to:

- ✓ Use the x – axis and x – coordinate and the y – axis and y – coordinate to understand how to graph points
- ✓ Graph points on a coordinate grid
- ✓ Tell about the attributes of two-dimensional figures
- ✓ Classify two-dimensional figures based on their definitions and attributes