

# **+ - X / 6TH GRADE MATH SYLLABUS / X - +**

**2026-2027**

**Welcome to 6th Grade Math! This course is a crucial transition from elementary to middle school mathematics. We will build on foundational skills to prepare for more advanced topics in the coming years. The curriculum focuses on developing a deep conceptual understanding of mathematical principles and applying them to solve real-world problems.**

## **6TH GRADE OVERVIEW**

### **Ratios and Proportional Relationships**

6th grade begins the formal study of ratios and proportions. Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Students expand the scope of problems for which they can use multiplication and division as they connect ratios and fractions learning the similarities and the differences. Students solve a wide variety of problems involving ratios and rates. Proportional relationships are added and studied in the 7th grade and so such methods as cross multiplication should not be taught until 7th grade.

### **THE NUMBER SYSTEM**

Students make use of fractions and coupled with an understanding of the relationship between multiplication and division they learn to explain why the procedures for dividing fractions make sense. With this understanding, students are in a better position to use these operations to solve mathematical and real-world problems. Students also extend their previous understanding of numbers and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value.

## **EXPRESSIONS AND EQUATIONS**

Students begin to use properties of arithmetic operations systematically to work with numerical expressions that contain whole number exponents. Students come to understand more fully the use of variables and variable expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one step equations. Students explore how algebraic expressions can represent written situations and generalize relationships from specific cases.

## **GEOMETRY**

Students build on their work with area from earlier grades by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can more easily determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in the 7th grade by drawing polygons in the coordinate plane.

## **STATISTICS AND PROBABILITY**

6th grade students begin to formally develop their ability to think statistically. They understand that a set of data (collected to answer a question) will have a distribution, which can be described by its center, spread, and shape. Students calculate the median, mean, and mode and relate these to the overall shape of the distribution. They recognize that the median measures center in the sense that it is the middle value of the data and the mean measures center in that it is the numerical average of all the data points in the set. They understand that the mode refers to the most frequently occurring number found in a set of numbers and is found by collecting and organizing the data in order to count the frequency of each result. Students display, summarize and describe data sets, considering the context in which the data were collected. Students use dot plots, box plots, pie charts, and stem plots to display numerical data.

# COURSE STUDY

| UNIT                                                                                           | NUMBER OF DAYS<br>(May be revised throughout the year to support student understanding) | STANDARDS                                                                       |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Unit 1 - Expressions and Equations: Area, Algebraic Expressions, and Exponents                 | 31                                                                                      | 6.G.A.1<br>6.G.A.4<br>6.EE.A.2<br>6.EE.A.6<br>6.EE.A.1<br>6.NS.B.4              |
| Unit 2 - Decimals and Fractions: Base-Ten Operations, Division with Fractions, and Volume      | 23                                                                                      | 6.NS.B.3<br>6.NS.B.2<br>6.NS.A.1<br>6.G.A.2                                     |
| <b>1<sup>st</sup> Cumulative Benchmark</b>                                                     | <b>Oct. 1 - 9</b>                                                                       | <b>Covering all content to this point</b>                                       |
| Unit 3 - Ratio Reasoning: Ratio Concepts and Equivalent Ratios                                 | 17                                                                                      | 6.RP.A.1<br>6.RP.A.3                                                            |
| Unit 4 - Ratio Reasoning: Unit Rates and Percent                                               | 18                                                                                      | 6.RP.A.2<br>6.RP.A.3                                                            |
| <b>2<sup>nd</sup> Cumulative Benchmark</b>                                                     | <b>Dec 9 - 17</b>                                                                       | <b>Covering all content to this point</b>                                       |
| Unit 5 - Algebraic Thinking: Equivalent Expressions and Equations with Variables               | 21                                                                                      | 6.NS.B.4<br>6.EE.A.3<br>6.EE.A.4<br>6.EE.B.5<br>6.EE.B.7<br>6.EE.C.9            |
| Unit 6 - Positive and Negative Numbers: Absolute Value, Inequalities, and the Coordinate Plane | 24                                                                                      | 6.NS.C.5<br>6.NS.C.6<br>6.NS.C.7<br>6.EE.B.5<br>6.EE.B.8<br>6.NS.C.8<br>6.G.A.3 |

|                                                                                          |                     |                                                          |
|------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------|
| UNit 7 - Statistical Thinking: Data Distributions and Measures of Center and Variability | 24                  | 6.SP.A.1<br>6.SP.A.2<br>6.SP.B.5<br>6.SP.B.4<br>6.SP.A.3 |
| <b>Final Comprehensive Benchmark</b>                                                     | <b>March 2 - 12</b> | <b>Covering all content</b>                              |

## **GRADING:**

Students will receive grades through assessment programs Mastery Connect, Edulastics, class work, and projects. These assessments will all use the 100 point grading scale, as I do not weigh grades.

## **GRADING SCALE:**

**100-90 A                  89-80 B                  79-70 C                  69-60 D                  59 and below F**

## **MISSED WORK:**

If a student is absent, students will receive any notes and or information given during class. Also assessments of any kind will have an extended due date. I will communicate with the student what needs to be made up during their absence. I ALWAYS allow students to make up work when absent. However, it is up to the student to be responsible for their missed work.

## **REQUIRED MATERIALS:**

- Earbuds or Earphones \* THESE WILL BE USED DAILY. IT MAY BE A GOOD IDEA TO BUY A COUPLE SETS.
- 1 Notebook
- 1 pencil pouch with colored pencils or crayons
- Dry erase markers- Best deal is on amazon, not expo markers.

## **CLASSROOM EXPECTATIONS**

1. **Be Respectful:** Treat your classmates, teacher, and classroom equipment with respect.
2. **Be Safe:** Follow all school safety rules.
3. **Be On Task:** Complete all assignments, notes, and projects on time and take ownership of your learning.

**\*EVERY ACTION, WORD SPOKEN, OR INTERACTION WILL FALL UNDER ONE OF THESE RULES.**

## **ASSESSMENTS WINDOWS**

### **MATH CASE ASSESSMENTS**

**1<sup>st</sup> Cumulative Benchmark: Oct. 1st - 9th**

**2<sup>nd</sup> Cumulative Benchmark: Dec. 9th - 17th**

**Final Comprehensive Benchmark: March 2nd - 12th**

**TCAP ASSESSMENTS April 7th - May 6th**

## **COMMUNICATION:**

I am excited to have a fun and educational year with all of you! Please feel free to contact me with any questions or concerns through DOJO. I try to respond as quickly as possible. Communication is very important and I always try to keep families informed.

Thank you!

Mrs. Phillips

5th & 6th Math and Science Teacher