**6th Grade Mathematics Syllabus**

*CENTERVIEW ELEMENTARY SCHOOL*

*2023-2024*

**Part 1: Course Information**

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**Course Description**

The sixth grade math curriculum is based on the Tennessee State Standards. I will try to provide a balance of opportunities for student learning that include the textbook, technology, group/partner work. Students in this course will study the following domains:

* Ratios and Proportional Relationships
* The Number System
* Expressions and Equations
* Geometry
* Statistics and Probability

With each unit, students will bring a letter home explaining what we are learning. These letters explain the concept as well as provide examples. PLEASE SIGN AND RETURN EACH LETTER.

**Standards:**

[**https://bestforall.tnedu.gov/lessons-and-learning-item?content-id=7321**](https://bestforall.tnedu.gov/lessons-and-learning-item?content-id=7321)

**Textbook & Course Materials**

I-Ready Textbook/Workbook

Fluency and Practice Workbook

I-Ready online program

Scientific Calculator

**Part 2: Student Learning Outcomes**

**Ratios and Proportional Relationships:** Sixth 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. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates. Proportional relationships are added and studied in the 7th grade.

**The Number System:** Students use fractions, multiplication, and division along with an understanding of the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve 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 of rational numbers and about the location of points in all four quadrants of the coordinate plane.

**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:** Sixth 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 roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. 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 numerical data sets, considering the context in which the data were collected. Students use number lines, dot plots, box plots, and pie charts to display numerical data.

**Part 3: Topic Outline/Schedule**

**1st 9 Weeks**

Unit 1: Expressions and Equations: Area, Algebraic Expressions, and Exponents

* Find area of parallelograms, triangles, and other polygons
* Use nets to find surface area
* Work with algebraic expressions
* Write and evaluate expressions with exponents
* Find greatest common factor and least common multiple

Unit 2: Decimals and Fractions: Base-Ten Operations, Division with Fractions, and Volume

* Add, subtract, and multiply multi-digit decimals
* Divide whole numbers and multi-digit decimals
* Understand division with fractions
* Divide fractions
* Solve volume problems with fractions

**2nd 9 Weeks**

Unit 3: Ratio Reasoning: Ratio Concepts and Equivalent Ratios

* Understand ratio concepts
* Find equivalent ratios
* Use part-to-part and part-to-whole ratios

Unit 4: Ratio Reasoning: Unit Rates and Percent

* Understand rate concepts
* Use unit rates to solve problems
* Understand percents
* Use percents to solve problems

**3rd 9 Weeks**

Unit 5: Algebraic Thinking: Equivalent Expressions and Equations with Variables

* Write and identify equivalent expressions
* Understand solutions of equations
* Write and solve one-variable equations
* Analyze two-variable relationships

Unit 6: Positive and Negative Numbers: Absolute Value, Inequalities, and the Coordinate Plane

* Understand positive and negative numbers
* Order positive and negative numbers
* Understand absolute value
* Write and graph one-variable inequalities
* Under the four-quadrant coordinate plane
* Solve problems in the coordinate plane

Unit 7: Statistical Thinking: Date Distributions and Measures of Center and Variability

* Understand statistical questions and data distributions
* Use dot plots and histograms to describe data distributions
* Interpret median and interquartile range in box plots
* Interpret mean and mean absolute deviation
* Use measures of center and variability to summarize data

**4th 9 Weeks**

* Review
* TN Ready Test

**Part 4: Grading Policy**

A -----90-100

B------80-89

C------70-79

D------60-70

F------0-59

Points you receive for graded activities will be posted to the Aspen Grade Book:

[**https://sis-cocke-county.tnk12.gov/aspen/logon.do**](https://sis-cocke-county.tnk12.gov/aspen/logon.do)

You will use the same username and password from the previous year.

**Student Testing Code of Ethics and Security**

 It is important for you as a student to know that the following guidelines are to be strictly followed. This year the TNReady test will count at least 10% of your final semester grade. Your work on this test is very important and it deserves your best effort.

I understand that during testing on the days of the assessment, I am responsible for:

* Not having any electronic devices on me or in my purse/backpack/pockets
	+ Including but not limited to cell phones, smart phones, smart watches, etc. **during testing or during breaks.**
	+ Best practice is for students to leave devices at home or in their lockers on the day of testing.
	+ If I am caught with a device during testing or during breaks, my test may be nullified, resulting in a zero as at least 10% of my final semester grade, and any school level disciplinary action as deemed appropriate by the administration.
* Trying my best on the test
	+ If I do not attempt to test (I give **no answers or randomly answer** questions) my test score may be nullified, resulting in a zero as at least 10% of my final semester grade, and any school level disciplinary action as deemed appropriate by the administration.
	+ The testing administrators and proctors in the testing environment will determine if no answers or random answering is taking place.