

SIXTH GRADE MATHEMATICS COURSE OUTLINE

Ms. Garcia

Room: 127

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The sixth grade math curriculum reinforces basic mathematical concepts and computational skills learned in the previous grades, and introduces new skills that are essential for all students to be successful. Concepts, procedures, and vocabulary are introduced and continually reinforced in class and throughout course assignments. Students will increase their mathematical knowledge and understanding with a strong emphasis on cooperative learning, individual exploration, problem solving, and real-world applications. We will be focusing on the New York State Mathematics Standards and the following units of study:

*Dates are subject to change**

Unit 1: The Number System (*September, October, & November*)

Overview:

- Students will learn to recognize place value in numerals for whole numbers and decimals, expressing numbers in scientific notation, and base ten.
- Students will develop and master algorithms for addition, subtraction, multiplication, and division over whole numbers, integers, and rational numbers.
- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Compute fluently with multi - digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.
- Students will order and compare rational numbers.
- Students will engage in real-world problem solving activities relative to rational numbers.
- Use absolute value to find distances between points on a coordinate plane,

Topics:

- *Review Divisibility Rules/Prime and Composite Numbers*
- *Exponents and LCM/GCF Review*
- *Review all basic operation calculations*
- *All decimal operations*
- *Integers*
- *Coordinate Plane*

- *Division of Fractions*
- *Analyze Rational Numbers*

Unit 2: Ratios, Rates, and Proportional Relationships (*December*)

Overview:

- Understand ratio concepts and use ratio reasoning to solve problems.
- Implement multiple forms of ratio language and ratio notation, and formalize understanding of equivalent ratios.
- Apply reasoning when solving collections of ratio problems in real world contexts using various tools (e.g., tape diagrams, double number line diagrams, tables, equations and graphs).
- Connect the understanding of ratios to the value of a ratio, and then to rate and unit rate, while discovering that a percent of a quantity is a rate per 100.
- Express a fraction as a percent and find a percent of a quantity in real world concepts, with supported reasoning.

Topics

- *Ratios*
- *Rates/Unit Rates (consumer application with decimals (discounts, percent, tax and analyzing which is the better buy/best price))*
- *Percentages*

Unit 3: Expressions and Equations (*January & February*)

Overview

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one - variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.
- Explore, substitute, and solve for variables in formulas.
- Read, write, and create algebraic expressions and equations from given word problems.
- Generate equivalent expressions, ultimately extending arithmetic properties from manipulating numbers to manipulating expressions.

Topics

- *Review Exponents*
- *Order of Operations (GEMDAS)*
- *Read/Write/Evaluate expressions with/without given variables*

- *Input/Output Tables*
- *Solve 1 and 2-step equations*
- *Solve and graph inequalities*

Unit 4: Geometry (*March & April*)

Overview

- Solve real - world and mathematical problems involving area, surface area, and volume.
- Students will study conventional measurements of distance, area, and volume in both US and Metric measurements/units. Students will calculate the area and perimeter of a figure on the Cartesian Plane.
- Use composition and decomposition to determine the area of triangles, quadrilaterals, and other polygons.
- Apply the surface area formula to real-life contexts and distinguish between the need to find surface area or volume within contextual situations.

Topics

- *Perimeter*
- *Area of Parallelograms and Triangles*
- *Surface Area*
- *Shapes and the Coordinate Plane*
- *Volume*

Unit 5 Statistics & Probability (*May & June*)

Overview

- Students will begin to think and reason statistically, first by recognizing a statistical question as one that can be answered by collecting data.
- Collect, organize, and analyze data, statistical questions, and graphs.
- Identify landmarks of data sets, which include all measures of center; mean, median, and range.
- Develop an understanding of statistical variability.
- Summarize and describe distributions.
- Understand that the probability of a chance event is a number between 0 and 1 inclusive, that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood.
- Approximate the probability of a simple event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability

Topics

- *Statistical Questions*
- *Measures of Center and Range*
- *Quartiles and Interquartile Range*
- *Mean Absolute Deviation*
- *Graphs (Frequency Table, Histogram, Stem and Leaf Plot, Box and Whisker Plot, and Bargraphs)*
- *Observing frequencies in data*

Honor's Math: Within each unit, students will be taught seventh-grade material relative to the units stated above.

Throughout the year we will discuss, practice, and master the following mathematical practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.
9. Use estimation to find reasonableness in a solution.
10. Tutor a peer.

Expectations

- This is OUR classroom and we are a TEAM! We must all work together in order to achieve our goals. My goal is to teach you the sixth grade math standards in a safe, nurturing, fun, and positive environment. I also want you to enjoy math as much as I do! Your goals should be to succeed in math, get along with your peers, and come to class with a positive attitude, prepared to learn.
- Test review packets are given out a week before an exam. These packets will be reviewed in class. They can be submitted in advance and will be checked and returned so that you have the correct solution and strategy to study for the exam. If you receive a failing grade on an exam, you can submit test corrections for an increase in your score. You may complete test corrections within the first week after taking the test.

Materials:

Big Ideas Math Student Journal and textbook, Interactive notebook, folder, pencils, erasers, and homework planner.

Evaluation:

Unit assessments, weekly/bi-weekly quizzes, daily journal work, homework, classwork/participation/preparedness, projects, interactive notebook, and alternative performance assessment are the basis for students' grades.

Grade Procedures:

Exams 45%

Classwork 35%

Homework 10%

Citizenship/Participation 10%

Notebook: Your notebook is your textbook, so try your best to take good care of it. Your notes must be organized, neat, and contain all information. Feel free to be creative. If you are absent, you must update your notebook. Notebooks are graded throughout each quarter and at random. Please store all handouts and worksheets in your folder chronologically.

Class Participation: Your class grade is determined by the quality of your participation and attitude in class. Effort, preparedness, attendance, punctuality, asking and answering questions, following rules, and helpfulness to others are all components of this and can affect your grade.

Homework: Completing your homework is essential to your success in this course. Homework is assigned weekly and is checked for effort. The work leading to the solution must be shown. We will review any homework assignment the following day, so you will have the opportunity to clarify your understanding. Homework that is incomplete must be made up. You will not receive any credit for missed homework assignments unless it is excused. If you miss three homework assignments, a parent or guardian will be contacted. If you left your homework planner at school, you can visit my webpage to find the homework posting and any uploaded worksheets/review sheets assigned.

Exams: Several exams and quizzes will be given throughout the year. All exams will be announced several days in advance. If you are absent for an exam, you will be given a make-up exam on the day you return to school. Time will be allotted for in-class reviews. Students are encouraged to write out complete test corrections for all tests. Extra points will be given when test corrections are submitted.

Projects: At the beginning or end of each chapter there will be a unit project based on the content presented. The project will assess how well you have understood the concepts covered in each chapter.

Grades: Your grades will be determined by 45% exams, 10% homework, Citizenship/Participation 10%, and 35% classwork.

I have read the following information carefully and I agree to have an exciting year in Mathematics. ☺

Student Signature _____

Date _____