7th Grade Math – 2nd Semester

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Course Description

This Math course is designed to reinforce and expand the concepts and skills introduced in the 6th grade. Students will develop an understanding of and applying proportionality, including similarity through numbers, operations, algebra, and geometry. An understanding of and using of formulas to determine surface areas and volumes of three-dimensional shapes through measurements, geometry, and algebra will also be developed. A focus will also be on the understanding of operations on all rational numbers and solving linear equations.

Common Core Standards

Students will:

- Understand and demonstrate knowledge of rational numbers including integers, fractions, decimals, percents, and absolute values.
- Recognize pertinent information for problem solving.
- Know, understand, and use appropriate mathematics vocabulary.
- Know and understand how to perform general computations accurately and use that information to compute problems drawn from real life situations.
- Understand how to estimate and judge reasonableness of results.
- Understand and use the U.S. customary and metric measurements.
- Be able to apply the concepts of rates, ratios, and proportions and analyze each.
- Use algebraic symbolism as a tool to represent mathematical relationships.
- Evaluate, solve, and understand algebraic expressions and inequalities.
- Understand the concept of functions and represent each in a variety of formats.
- Apply functions to a variety of problems.
- Understand and apply concepts of size, shape, and spatial relationships.
- Apply the geometry of right triangles.
- Understand and apply graphing in two dimensions.
- Know and understand the concepts of data analysis, probability, and statistics.

Instructional Materials

Textbook: Glencoe McGraw-Hill Math Connects Course 2 and Internet for practice.

Class Expectations

- Be Prepared – always have your pencil, paper, notebook, book(s), and completed assignments – **Each day an assignment is late your grade will be reduced by 10%.**
  I **DO NOT** give ZEROS (0), if you do not turn in an assignment you will be given an incomplete until it is finished. This is your education, your future, you are expected to complete each assignment.
- Be Respectful – to teacher, classmates, and visitors; respect all school rules (dress code, etc…); raise hand before speaking; respect others' opinions.
- Be Actively Engaged – pay attention, participate, take notes, ask questions, and provide answers.
- Take Care of the textbooks given to you, desks you sit in, items you borrow from others and any other class materials presented.
- Be Responsible for Your Actions

Class Materials Needed

All your writing will be in pencil and one notebook specifically for Math.

Tentative Units with Instructional Dates

Quarter 3

▪ **Week 1** – Chapter 6, Ratios and Proportions, focusing on rates, ratios, and rate of change and slope	**Standard:** Be able to apply the concepts of rates, ratios, and proportions and analyze each. **Objectives:** Write ratios as fractions in simplest form, and determine whether two ratios are equivalent, determine unit rates, and identify rate of change and slope using tables and graphs.
▪ **Week 2** – Chapter 6, Ratios and Proportions, focusing on measurement within the customary and metric system	**Standard:** Understand and use U.S. customary and metric measurements. **Objectives:** Change units in the customary system, change units of length, capacity, and mass, and solve proportions.
▪ **Week 3** – Chapter 6, Ratios and Proportions, focusing on scale drawings, solving proportions, and fractions, decimals, and percents, Chapter 6 Exam	**Standard:** Be able to apply the concepts of rates, ratios, and proportions and analyze each. **Objectives:** Solve problems by drawing a diagram and write percents as fractions and decimals and decimals as fractions.
▪ **Week 4** – Chapter 7, Applying Percents, focusing the percent of a number, the percent proportion and percent and estimation	**Standard:** Be able to apply the concepts of rates, ratios, and proportions and analyze each. **Objectives:** Find the percent of a number, solve problems using the per cent proportion, and estimate percents by using fractions and decimals.
▪ **Week 5** – Chapter 7, Applying Percents, focusing on the percent equation, percent of change, and sales tax	**Standard:** Be able to apply the concepts of rates, ratios, and proportions and analyze each. **Objectives:** Solve problems by using the percent equation, find the percent of increase or decrease, and solve problems involving sales tax.
▪ **Week 6** – Chapter 7, Applying Percents, focusing on discount and simple interest, Chapter 7 Exam, and Chapter 6-7 Exam	**Standard:** Know and understand how to perform general computations accurately and use that information to compute problems drawn from real life situations. **Objectives:** Solve problems involving discount and solve problems involving simple interest.
▪ **Week 7** – Chapter 8, focusing on line plots, measures of Central Tendency and range, and stem-and-leaf plots	**Standard:** Know and understand the concepts of analysis, probability, and statistics. **Objectives:** Display and analyze data using a line plot, describe a set of data using mean, median, mode, and range, and display and analyze data in a stem-an-leaf plot.
▪ **Week 8** – Chapter 8, focusing on bar graphs and histograms, problem-solving using a grade and using graphs to predict	**Standard:** Understand and apply graphing in two dimensions. **Objectives:** Display and analyze data sing bar graphs and histograms, solve problems by using a graph, and analyze line graphs and scatter plots to make predictions and conclusions.
▪ **Week 9** – Chapter 8, focusing on using data to predict, using sampling to predict, and misleading statistics, Chapter 8 exam	**Standard:** Recognize pertinent information for problem solving. **Objectives:** Predict actions of larger group by using a sample and recognize when statistics and graphs are misleading.

Quarter 4

▪ **Week 10** – Chapter 9, focusing on simple events, samples spaces, the fundamental counting principle, and permutations.	**Standard:** Know and understand the concepts of data analysis, probability, and statistics. **Objectives:** Find the probability of a sample event, find samples spaces and probabilities, use multiplication to count outcomes and find probabilities, and find the number permutations of a set of objects and find probabilities.
▪ **Week 11** – Chapter 9, focusing on combinations and compound events, Chapter 9 Exam, Chapters 7-9 Exam	**Standard:** Know and understand the concepts of data analysis, probability, and statistics. **Objectives:** Find the number of combinations of a set of objects and find probabilities and find the probability of independent and dependent events.
▪ **Week 12** – Chapter 10, focusing on angle relationships, complementary and supplementary angles, triangles, and quadrilaterals	**Standard:** Apply the geometry of right triangles. **Objectives:** classify angles and identify vertical and adjacent angles, identify complementary and supplementary angles and find missing angle measures, identify and classify triangles, and identify and classify quadrilaterals.
▪ **Week 13** – Chapter 10, focusing on similar figures, polygons and tessellations, translations and reflections, Chapter 10 Exam	**Standard:** Understand and apply concepts of size, shape, and spatial relationships. **Objectives:** Determine whether figures are similar and find a missing length in a pair of similar figures, classify polygons and determine which polygons can form a tessellation, and identify figures with line symmetry and graph reflections on a coordinate plane.
▪ **Week 14** – Chapter 11, focusing on area of a parallelogram, area of a triangle and trapezoid and area of circles	**Standard:** Apply the geometry of right triangles. **Objectives:** Find the areas of parallelograms, find the areas of triangles and trapezoids, and find the areas of circles.
▪ **Week 15** – Chapter 11, focusing on three-dimensional figures, volume of prisms, and volume, Chapter 11 Exam	**Standard:** Understand and apply concepts of size, shape, and spatial relationships. **Objectives:** Build three-dimensional figures given the top, side, and front views, find the volumes of rectangular and triangular prisms, and find the volumes of cylinders.
▪ **Week 16** – Review Chapters 9-11, Chapters 9-11 Exam	**Standard:** Understand and apply concepts of size, shape, and spatial relationships. **Objectives:** Demonstrate knowledge of basic geometrical figures.
▪ **Week 17** – Review for Final Exam	**Standard:** Know, understand, use, and apply appropriate mathematics vocabulary and concepts.
▪ **Week 18 – Semester Final Exam**	

Assessment/Tests

See Instructional Units/Dates

Grading Procedures

- Each assignment, assessment, project will be worth individual points.
- Homework will be due daily. Full points will not be given if the assignment is late.
- All assessments must be taken during the class period. If absent, the student should arrange a make-up time before or after school.
- Grades will be calculated by dividing the total points earned by a student by the total points possible.