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| **Teacher: Susan Stamm, 8th Grade** | | **School Year: 2014-2015** |
| **Course:** Math 8 | | **Intended Grade Level:** 8th grade |
| **Course Summary**: Math 8 uses a Glencoe Common Core text to develop both a student’s understanding of mathematical practices through various problem strategies, and their procedural skills through guided and independent practices. Each lesson begins with an essential question and highlights a key concept. The key concept is then further developed through examples. A write-in textbook is provided to each student for ease in problem solving and note taking. The 8th grade course will prepare a student to transition to a 9th grade Algebra course by introducing linear equations and functions and graphs of non-linear functions using a graphing calculator. | | |
| **Course Outcomes:**  ***By the end of the course, students will know***: How to simplify expressions, identify rational numbers, solve multi-step equations, graph and identify functions, graph transformations on the coordinate plane and use the Pythagorean Theorem, and how to make a scatter plot and use a graphing calculator to find the line of best fit.  ***By the end of the course, students will be able to:*** Write and solve equations, explore relationships that are linear and model functions with graphs. Students will also use physical models and graphs to understand transformations on the coordinate plane and apply the Pythagorean Theorem. Students should be able to interpret the correlation of a scatter plot and a two-way table. This course is designed to prepare students to take the 8th grade Pennsylvania System of State Assessment test based on the Common Core State Standards. | | |
| **Standards Targeted[[1]](#footnote-1)**  Pennsylvania State Common Core Standards | | |
| **Units of Study** | | |
| **Units Topic** | **Primary Learning Outcome** | |
| Chapter 1 The Number System and Real Numbers | Students will be able to approximate an irrational number, apply the Properties of Exponents to monomial expressions, write numbers in scientific notation and simplify square and cube root expressions. | |
| Chapter 2 Equations in one Variable | Students will be able to solve multi-step equations with rational coefficients using distribution and identify various problem solving strategies. | |
| Chapter 3 Linear Equations in Two Variables | Students will be able to identify a constant rate of change from a table or graph, write and graph linear equations in slope-intercept form or standard form and write a direct variation equation. Students will also use a graphing calculator to graph and solve systems. | |
| Chapter 4 Functions and Function Notation | Students will be able to describe and identify functions shown as a table, graph or mapping. Students will be able to graph non-linear functions using a graphing calculator. | |
| Chapter 5 Triangles and the Pythagorean Theorem | Students will understand the Properties of Parallel lines and the Triangle Sum Theorem and apply the Pythagorean Theorem to right triangles. | |
| Chapter 6 Transformations on the Coordinate Plane | Students will create rotations, reflections, translations and dilations on a coordinate plane. | |
| Chapter 7 Congruence and Similarity | Students will understand congruence and similarity of two-dimensional figures using rotations, reflections, translations and dilations. | |
| Chapter 8 Volume and Surface Area of Solids | Students will use formulas to find the Volume and Surface of three-dimensional shapes and construct nets of solids. | |
| Chapter 9 Scatter plots and Data Analysis | Students will create scatter plots and find regression lines using a graphing calculator and analyze data displayed in two-way tables. | |
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| **Advanced Learner Recommendations** | | |
| * Every lesson includes two Inquiry Labs. These fall into one of two different categories. Some are graphing calculator activities while other labs further investigate key concepts. These are excellent activities for the advanced learner. * Every lesson also includes a 21st Century Career application project | | |
| **Struggling Learner Recommendations** | | |
| * + - Vocabulary is emphasized in the Glencoe text. Every Chapter includes a vocabulary review.     - On-line self check quizzes are available with every lesson in the Glencoe text.     - The on-line book includes tutors to demonstrate sample problems from the text.     - Teacher created Study Guides are used for every test     - Teacher notes are preprinted and filled in during class. | | |

1. Indicate primary Standards emphasis:

   PA Core - Math / ELA / Science & Technology / History & Social Studies [↑](#footnote-ref-1)