NORTH CAROLINA ESSENTIAL STANDARDS

Occupational Course of Study
Introduction to Mathematics

Note: All students following the Occupational Course of Study are also required to take English I, II, III, and IV, Math I, American History I and American History II, and Health and Physical Education.

Grade: High School

Course: Algebra

- **OIM.A.1** - Apply algebraic properties to solve problems.
  - **OIM.A.1.1** - Use appropriate strategies to solve one and two-step equations resulting in positive solutions in real world contexts.
  - **OIM.A.1.2** - Represent inequalities in real world situations.
  - **OIM.A.1.3** - Use appropriate strategies to solve one and two-step inequalities using whole numbers in real world contexts.
  - **OIM.A.1.4** - Illustrate the distributive property using area models.
  - **OIM.A.1.5** - Understand the use of the distributive property and combining like terms to write equivalent algebraic expressions.

- **OIM.A.2** - Understand patterns and relationships.
  - **OIM.A.2.1** - Understand the use of the Cartesian Coordinate Plane to graph and identify ordered pairs.
  - **OIM.A.2.2** - Represent patterns in real world situations using a table, graph, or equation.
  - **OIM.A.2.3** - Identify the slope given a table, graph, or equation.
  - **OIM.A.2.4** - Represent the equation of a line in slope-intercept form, given the slope and y-intercept.
  - **OIM.A.2.5** - Represent a linear equation graphically given the slope and y-intercept.
  - **OIM.A.2.6** - Represent ordered pairs and linear equations.

Course: Geometry

- **OIM.G.1** - Use properties of two and three-dimensional figures to solve problems.
  - **OIM.G.1.1** - Calculate perimeter of polygons and circumference of circles to solve real world problems.
  - **OIM.G.1.2** - Calculate areas of polygons and circles to solve real world problems.
  - **OIM.G.1.3** - Calculate volume of rectangular prisms & cylinders.
  - **OIM.G.1.4** - Use the square root of the area to identify the length of the side of a square.
  - **OIM.G.1.5** - Use the Pythagorean Theorem to solve real world problems.

Course: Measurement

- **OIM.M.1** - Apply time and measurement skills to solve problems.
  - **OIM.M.1.1** - Use analog and digital clocks to tell time.
  - **OIM.M.1.2** - Identify regularly scheduled activities based on time.
  - **OIM.M.1.3** - Use time to solve problems.
  - **OIM.M.1.4** - Use a calendar to solve problems.
  - **OIM.M.1.5** - Use standard measurement tools to measure length, capacity, weight, and temperature.

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Course: Number and Operations

- **OIM.N.1** - Understand rational numbers.
  - ○ **OIM.N.1.1** - Compare integers, decimals and fractions.
  - ○ **OIM.N.1.2** - Identify equivalent fractions, decimals, and percents.
  - ○ **OIM.N.1.3** - Identify absolute values and opposites.
  - ○ **OIM.N.1.4** - Use order of operations to simplify numerical expressions.
  - ○ **OIM.N.1.5** - Identify the greatest common factor and least common multiple.
  - ○ **OIM.N.1.6** - Use calculators to solve non-negative integer exponential expressions.

- **OIM.N.2** - Apply mathematical operations with rational numbers to solve problems.
  - ○ **OIM.N.2.1** - Use calculators to solve real world fraction and mixed number problems.
  - ○ **OIM.N.2.2** - Use calculators to solve real world decimal problems.
  - ○ **OIM.N.2.3** - Use calculators to solve real world integer problems.
  - ○ **OIM.N.2.4** - Use addition, subtraction, multiplication and division with calculators to evaluate algebraic expressions.

- **OIM.N.3** - Apply ratios, proportions and percents to solve problems.
  - ○ **OIM.N.3.1** - Use standard ratio notation for expressing ratios in part-to-part or a part-to-whole relationship.
  - ○ **OIM.N.3.2** - Use proportional reasoning to solve real world problems including recipes and unit rates.
  - ○ **OIM.N.3.3** - Use appropriate strategies to solve percent problems.
  - ○ **OIM.N.3.4** - Use scale factors and models to solve real world problems.

Course: Statistics and Probability

- **OIM.S.1** - Understand data in terms of graphical displays, measures of center and range.
  - ○ **OIM.S.1.1** - Interpret data from circle graphs, bar graphs, pictographs, maps, and scatter plots, in context.
  - ○ **OIM.S.1.2** - Calculate the mean, median, mode and range of a data set.
  - ○ **OIM.S.1.3** - Classify type (positive, negative, no relation) of association of data in scatterplots.
  - ○ **OIM.S.1.4** - Represent trends on scatterplots when appropriate, with a linear model.