**General Math – Building and Design**

To be used with Career Connections: Math for the Trades

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| **Unit Name** | **Lessons** | **Objective** | **Vocabulary** |
| 1. General Math | 1.1 Whole Numbers | Learn place value for whole numbers.  Identify what a whole number is. | Counting numbers  Whole numbers  Place value |
| 1.2 Addition | Add single-, double-, and triple-digit numbers.  Perform “estimate, calculate, and check” operation. | Addition  Sum  Equation  Calculate  Validation  Carrying |
| 1.3 Subtraction | Subtract single-, double-, and triple-digit numbers | Subtraction  borrowing |
| 1.4 Multiplication | Multiply single-, double-, and triple-digit numbers | Multiplication  Product  Multiplicand  Multiplier  factor |
| 1.5 Division | Divide single-, double-, and triple-digit numbers | Division  Dividend  Divisor  Quotient  remainder |
| 2. Fractions | 2.1 Fraction Terms and Concepts | Define fraction, numerator, denominator, proper fraction, improper fraction, and mixed number.  Find a common denominator for two or more fractions.  Reduce Fractions to lowest terms. | Denominator  Numerator  Proper Fractions  Improper Fractions  Equivalent Fractions  Mixed Numbers  Denominator  Least or Lowest Common Denominator  Reducing a fraction  Lowest Terms  Greatest Common Factor  Simplifying the Fraction |
| 2.2 Adding and Subtracting Fractions | Add and subtract fractions and mixed numbers.  Add and subtract fractions with the same or different denominators. |  |
| 2.3 Multiplying Fractions | Multiply fractions and mixed numbers and reduce to lowest terms. | Canceling |
| 2.4 Dividing Fractions | Divide fractions and mixed numbers. |  |
| 2.5 Ratios and Proportions | Calculate ratios and proportions. | Proportion  Extremes  Means |
| 3. Decimals | 3.1 Decimal Terms and Concepts | Define Decimals and decimal place values.  Round to a specific decimal place value. | Decimal point  Decimal place value  Decimal places  Power  Power of ten  Exponent  Rounding |
| 3.2 Adding and Subtracting Decimals | Add and subtract decimals.  Estimate, calculate, and check decimals. |  |
| 3.3 Multiplying and Dividing Decimals | Multiply and divide decimals. |  |
| 3.4 Converting Decimals to Fractions and Fractions to Decimals | Convert decimals to fractions and fractions to decimals.  Calculate ratios and proportions using decimals. |  |
| 3.5 Using Percentages | Convert decimals and fractions to percentages and percentages to decimals and fractions.  Calculate a percent of a number.  Calculate the percent that one number is of another. | Percent  Percentage |
| 4. Measurement and Measurement Tools | 4.1 Units of Measure | Convert measurements from one unit of measure to another. (Omit metric conversions.) | Linear measurements  Conversion factor  Order of operations  Meter  Angle  Degree  Minuets  Seconds  Vertex  Right angle  Acute angle  Obtuse angle |
| 4.2 Measurement Tools and How to Read Them | Identify common measurement tools to measure lines and angles.  Use measurement tools to measure lines and angles. | Protractors  Ruler  Scale  Micrometer |
| 4.3 Measurement on Scale Drawings | Accurately read measurements in scale drawings. | Scale drawing |
| 5. Layout | 5.1 Lines, Circles, and Angles | Use construction of circles, squares, and rectangles as basic layout tools. | Straight Line  Degrees  Bisecting  Perpendicular  Plumb  Level  Radius  Diameter  Perimeter  Circumference  Arc  Sector  Chord  Compass  Parallel lines  Perpendicular bisector  Angle  Vertex  Obtuse  Acute  Compound angle |
| 5.2 Squares, Rectangles, and Triangles | Calculate the perimeter for rectangles, squares, triangles and circumference for circles. | Square  Rectangle  Diagonal  Triangle  Base  Altitude  Isosceles triangle  Equilateral triangle  Right triangle  Hypotenuse |
| 5.3 Squaring Numbers, Square Roots, and the Pythagorean Theorem | Use the Pythagorean Theorem. | Squaring a number  Exponent  Square root  Pythagorean Theorem |
| 6. Area Measure | 6.1 Area Measure vs. Linear Measure | Use and convert square units of measure. | Surface area  Area  Sectors |
| 6.2 Rectangles and Squares | Calculate the area of rectangles and squares. |  |
| 6.3 Triangles | Calculate the area of triangles. | Altitude |
| 6.4 Circles | Calculate the area of circles and sectors of circles.  Calculate the area of irregular shapes. | Pi |
| 6.5 Surface Area | Calculate the surface area of three-dimensional shapes. | Rectangular solids  Congruent  Cube  Cylinder  Lateral area |
| 7. Volume Measure | 7.1 Measuring Volume | Describe the difference between area measurement and volume measurement.  Convert cubic units of measure from one unit of measure to another. | Linear measure  Area  Volume  Cubic |
| 7.2 Calculating Volume for Rectangular and Triangular Solids | Calculate the volume of rectangular and triangular solids. | Rectangular solid  Congruent  Cube  Triangular solid  Pyramid  Altitude |
| 7.3 Calculating Volume for Spheres, Cones, and Cylinders | Calculate the volume of spheres, cylinders and cones. | Sphere  Pi  Cone |
| 7.4 Estimating Weight | Calculate the weight of a given volume of material. |  |
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