

MD Measurement and Data

- **3.MD.A Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**
 - **3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.**
 - [Match clocks and times \(3-T.1\)](#)
 - [Match analog and digital clocks \(3-T.2\)](#)
 - [Read clocks and write times \(3-T.3\)](#)
 - [A.M. or P.M. \(3-T.4\)](#)
 - [Write times \(3-T.5\)](#)
 - [Elapsed time: find the end time \(3-T.6\)](#)
 - [Elapsed time word problems: find the elapsed time \(3-T.8\)](#)
 - **3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard metric units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same metric units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.**
 - [Measurement word problems \(3-Z.4\)](#)
 - [Which metric unit of weight is appropriate? \(3-Z.15\)](#)
- **3.MD.B Represent and interpret data.**
 - **3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.**
 - [Use bar graphs to solve problems \(3-U.7\)](#)
 - [Create bar graphs \(3-U.8\)](#)
 - [Create pictographs \(3-U.13\)](#)
 - **3.MD.B.4 Generate measurement data by measuring lengths of objects using rulers marked with halves and fourths of an inch. Record and show the data by making a line plot (dot plot), where the horizontal scale is marked off in appropriate units—whole numbers, halves, or fourths.**
 - [Create line plots with fractions \(3-U.11\)](#)
 - [Measure using an inch ruler \(3-Z.3\)](#)
- **3.MD.C Geometric measurement: understand concepts of area and relate area to multiplication and to addition.**
 - **3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.**
 - **3.MD.C.5.a A square with side length of one unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.**
 - [Find the area of figures made of unit squares \(3-DD.6\)](#)
 - [Select figures with a given area \(3-DD.7\)](#)
 - [Select two figures with the same area \(3-DD.8\)](#)
 - [Find the area of rectangles with missing unit squares \(3-DD.15\)](#)
 - **3.MD.C.5.b A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.**
 - [Create figures with a given area \(3-DD.11\)](#)
 - [Create rectangles with a given area \(3-DD.12\)](#)

- **3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in., square ft., and non-standard units).**
 - [Find the area of figures made of unit squares \(3-DD.6\)](#)
 - [Select figures with a given area \(3-DD.7\)](#)
 - [Select two figures with the same area \(3-DD.8\)](#)
 - [Find the area of rectangles with missing unit squares \(3-DD.15\)](#)
- **3.MD.C.7 Relate area to the operations of multiplication and addition.**
 - **3.MD.C.7.a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.**
 - [Tile a rectangle and find the area \(3-DD.9\)](#)
 - [Multiply to find the area of a rectangle made of unit squares \(3-DD.10\)](#)
 - [Create rectangles with a given area \(3-DD.12\)](#)
 - **3.MD.C.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.**
 - [Make arrays to model multiplication \(3-E.7\)](#)
 - [Find the area of rectangles and squares \(3-DD.13\)](#)
 - [Find the area of rectangles: word problems \(3-DD.16\)](#)
 - **3.MD.C.7.c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.**
 - **3.MD.C.7.d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.**
 - [Find the areas of complex figures by dividing them into rectangles \(3-DD.17\)](#)
 - [Find the area of complex figures \(3-DD.18\)](#)
- **3.MD.D Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.**
 - **3.MD.D.8 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.**
 - [Perimeter of rectangles \(3-DD.1\)](#)
 - [Perimeter of rectilinear shapes \(3-DD.2\)](#)
 - [Perimeter of polygons \(3-DD.3\)](#)
 - [Perimeter: find the missing side length \(3-DD.4\)](#)
 - [Perimeter: word problems \(3-DD.5\)](#)
 - [Relationship between area and perimeter: find the perimeter \(3-DD.22\)](#)
 - [Relationship between area and perimeter: find the area \(3-DD.23\)](#)