

## MD Measurement and Data

- **4.MD.A Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.**
  - **4.MD.A.1 Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.**
    - [Which customary unit is appropriate? \(4-M.4\)](#)
    - [Conversion tables - customary units \(4-M.9\)](#)
    - [Which metric unit is appropriate? \(4-M.13\)](#)
    - [Conversion tables - metric units \(4-M.18\)](#)
    - [Convert metric mixed units \(4-M.19\)](#)
    - [Convert time units \(4-N.1\)](#)
  - **4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.**
    - [Measurement word problems \(4-M.2\)](#)
    - [Measurement word problems with fractions \(4-M.3\)](#)
    - [Compare customary units by multiplying \(4-M.10\)](#)
    - [Elapsed time: word problems \(4-N.7\)](#)
    - [Find start and end times: multi-step word problems \(4-N.8\)](#)
  - **4.MD.A.3 Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.**
    - [Find the perimeter of rectangles using formulas \(4-AA.1\)](#)
    - [Perimeter: word problems \(4-AA.4\)](#)
    - [Find the area or missing side length of a rectangle \(4-AA.7\)](#)
    - [Area: word problems \(4-AA.8\)](#)
    - [Area between two rectangles \(4-AA.10\)](#)
    - [Relationship between area and perimeter \(4-AA.12\)](#)
    - [Area and perimeter: word problems \(4-AA.13\)](#)
    - [Use area and perimeter to determine cost \(4-AA.16\)](#)
- **4.MD.B Represent and interpret data.**
  - **4.MD.B.4 Make a line plot (dot plot) representation to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots (dot plots).**
    - [Create and interpret line plots with fractions \(4-I.8\)](#)
- **4.MD.C Geometric measurement: Understand concepts of angle and measure angles.**
  - **4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:**
    - **4.MD.C.5.a An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through  $\frac{1}{360}$  of a circle is called a "one-degree angle," and can be used to measure angles.**
      - [Angles as fractions of a circle \(4-Y.2\)](#)

- [Use fractions to find the measure of an angle \(4-Y.3\)](#)
    - [Angles of 90, 180, 270, and 360 degrees \(4-Y.4\)](#)
    - [Measure angles on a circle \(4-Y.5\)](#)
  - **4.MD.C.5.b An angle that turns through n one-degree angles is said to have an angle measure of n degrees.**
    - [Use fractions to find the measure of an angle \(4-Y.3\)](#)
    - [Angles of 90, 180, 270, and 360 degrees \(4-Y.4\)](#)
    - [Estimate angle measurements \(4-Y.8\)](#)
- **4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.**
  - [Measure angles with a protractor \(4-Y.6\)](#)
  - [Draw angles with a protractor \(4-Y.7\)](#)
- **4.MD.C.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.**
  - [Adjacent angles \(4-Y.9\)](#)
  - [Angle measures: word problems \(4-Y.10\)](#)