

Grade 4 Smarter Balanced Assessment Item Specifications Fact Sheet

Claim 1 - Target I: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Content Domain: Measurement and Data

Claim 1 Supporting Cluster

Standards Assessed in Target I:

4.MD.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. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*

4.MD.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.

4.MD.3: Apply the area and perimeter formulas for rectangles in real-world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Achievement Level Descriptors

Level 1	Students should be able to know relative sizes of measurement units within one system of units, including in, ft, yd; km, m, cm; kg, g; lb., oz.; L, mL; and hr, min, sec.
Level 2	Students should be able to express measurements in a larger unit in terms of a smaller unit within a single system of measurement, record measurement equivalents in a two-column table, and apply the perimeter formula to rectangles in mathematical problems.
Level 3	Students should be able to use the four operations to solve 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; and apply the area formula to rectangles in mathematical problems.
Level 4	Students should be able to apply the perimeter and area formulas to rectangles in word problems.

Construct-Relevant Vocabulary

area, equivalent, interval, mass, perimeter, square units, volume

Allowable Stimulus Materials

Number lines featuring measurement scales, diagrams, tables, graphics of rectangles, equations, whole numbers, decimals (to the hundredths), fractions (limited to denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100), measurements (in units of km, m, cm; kg, g; lb, oz; L, mL; hr, min, sec)