Mathletics NWEA Common Core -Measurement & Data

Skill Quests



RIT Score Band



May, 2022

NWEA Common Core

Measurement & Data 3–5 Skill Quests May 2022

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RIT Score Band 189–200

1.1 Solve problems involving measurement and estimation

Outcome	Quests	Content
3.MD.A.1 Tell and write time to the	Tell and write time to	Telling time to the minute,
nearest minute and measure time	the minute	digital and analog
intervals in minutes. Solve word		Calculating elapsed time
problems involving addition and		Using timetables
subtraction of time intervals in		
minutes.		
3.MD.A.2 Measure and estimate	Liquid volume and	Estimating, comparing and
liquid volumes and masses of	mass	measuring in liters
objects using standard units of		Liquid volume: milliliters
grams (g), kilograms (kg), and liters		Solving word problems
(I). Add, subtract, multiply, or divide		involving liquid volume
to solve one-step word problems		Mass: kilograms
involving masses or volumes that		Mass: grams
are given in the same units to		Mass: measuring in grams and
represent the problem.		kilograms
		Solving 1-step word problems
		involving mass

1.2 Represent and interpret data

Outcome	Quests	Content
3.MD.B.3 Draw a scaled picture	Scaled picture and bar	Reading and representing
graph and a scaled bar graph to	graphs	data: scaled picture graph
represent a data set with several		Reading and representing
categories. Solve one- and two-		data: scaled bar graph
step "how many more" and "how		
many less" problems using		
information presented in scaled bar		
graphs.		
3.MD.B.4 Generate measurement	Representing and	Representing and reading line
data by measuring lengths using	reading line plots	plots
rulers marked with halves and		
fourths of an inch. Show the data		
by making a line plot, where the		
horizontal scale is marked off in		
appropriate units— whole numbers,		
halves, or quarters.		

1.3 Geometric measurement: understand concepts of area and relate area to multiplication and to addition

Outcome	Quests	Content
3.MD.C.5.A A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.	Estimating area with tiles	Estimating area with tiles
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.	Measuring area with unit squares	Measuring area with unit squares
3.MD.C.6 Measure areas by counting unit squares (square cm,	Measuring area with formal units	Introducing formal units for area
square m, square in, square ft, and improvised units).		Measuring the area of rectangles: square cm/m
		rectangles: square in/ft
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.	Finding the area with repeated addition	Finding the area of rectangles, repeated addition
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.	Solving area problems, multiplication	Solving area problems using multiplication
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 × b and a × c. Use area models to represent the distributive property in mathematical reasoning.	Finding the area using area models	Finding the area of rectangles, area models
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.	Finding the area of rectilinear figures	Finding the area of rectilinear figures

1.4 Geometric measurement: recognize perimeter

Outcome	Quests	Content
3.MD.D.8 Solve real world and	Solving perimeter	Finding the perimeter of
mathematical problems involving	problems	squares and rectangles
perimeters of polygons, including		Relating perimeter and area
finding the perimeter given the side		Introducing perimeter
lengths, finding an unknown side		Finding the perimeter of
length, and exhibiting rectangles		rectangles
with the same perimeter and		Finding a missing side length
different areas or with the same		given the perimeter
area and different perimeters.		Finding the perimeter of
		polygons

RIT Score Band 201–210

1.1 Solve problems involving measurement and conversion of measurements

Outcome	Quests	Content
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	Converting units of measure	Units of length: mm/cm/m/km Units of mass: g/kg and oz/lb Units of time: sec/min/hr and day/week/year Units of volume and capacity: mL/L
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.	Word problems: units of measure	Length word problems Mass word problems Elapsed time word problems Volume and capacity word problems Money word problems
4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	Applying area and perimeter formulas	Finding the area of a rectangle, formula Finding the perimeter of a rectangle, formula

1.2 Represent and interpret data

Outcome	Quests	Content
4.MD.B.4 Make a line plot to display	Fractions on a line plot	Fractions on a line plot
a data set of measurements in		
fractions of a unit (1/2, 1/4, 1/8).		
Solve problems involving addition		
and subtraction of fractions by		
using information presented in line		
plots.		
4.MD.C.5.A An angle is measured	Angle measurements in	Using a circular protractor to
with reference to a circle with its	a circle	measure angles
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 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.		
4.MD.C.6 Measure angles in whole-	Measuring and	Measuring and estimating
Sketch angles of specified measure.	estimating angles	ungles
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.	Solving problems with adjacent angles	Solving problems with adjacent angles

RIT Score Band 211–217

1.1 Convert like measurement units within a given measurement system

Outcome	Quests	Content
5.MD.A.1 Convert among different-	Converting	Converting between standard
sized standard measurement units	measurement units	metric units of length
within a given measurement		Converting between standard
system (e.g., convert 5 cm to 0.05		metric units of mass
m), and use these conversions in		Converting metric units of
solving multi-step, real world		volume and capacity
problems.		Converting between
		customary units of length
		Converting customary units of
		volume and capacity
		Converting between
		customary units of mass
		Word problems: measurement
		conversions

1.2 Represent and interpret data

Outcome	Quests	Content
5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.	Fraction problems: line plots	Represent and interpret measurements: line plots
5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Measuring volume with unit cubes	Measuring volume: unit cubes and cubic centimeters
5.MD.C.5.A Find the volume of a right rectangular prism with whole- number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	Volume: rectangular prisms	Volume: additive and multiplicative strategies

5.MD.C.5.B Apply the formulas	Volume formulas:	Applying volume formulas for
$V = I \times w \times h$ and $V = b \times h$ for	rectangular prism	rectangular prisms
rectangular prisms to find volumes		
of right rectangular prisms with		
whole-number edge lengths in the		
context of solving real world and		
mathematical problems.		
5.MD.C.5.C Recognize volume as	Volume: composite	Volume of composite
additive. Find volumes of solid	rectangular prisms	rectangular prisms
figures composed of two non-		
overlapping right rectangular		
prisms by adding the volumes of		
the non-overlapping parts, applying		
this technique to solve real world		
problems.		



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