SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	**Cluster:**	Convert like measurement units within a given measurement system.	**Grade level:**	5

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
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), ...	5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	NA

Student Friendly Language:
I can fluently convert measurement units within the same system. I can solve multi-step, real world problems, based on different measurement systems.

Know (Factual)	Understand (Conceptual) I want students to understand that:	Do (Procedural, Application, Extended Thinking)
• Standard measurement units and systems • Unit conversion patterns within the customary and metric systems for length, weight and volume	Converting among different-sized standard measurement units within a given measurement system is often necessary to solve multi-step, real world problems. There are different systems of measurement at work in our world.	Convert among measurement systems and identify patterns of conversion within systems for length, weight and volume. Interpret and solve multi step real world problems involving conversions in various measurement situations.

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Key Vocabulary:
metric units of measurement, customary units of measurement
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
Construction of building, bridges etc. would require the need for measurement conversion. Conversion in Recipes for cooking and baking Grocery shopping, unit pricing, Pharmacy - Converting weight or volume measurements for medications Measuring time elapsed like in running races Buying and selling of goods between countries

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Domain:	MEASUREMENT AND DATA	**Cluster:**	Represent and interpret data.	**Grade level:**	5

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
4.MD.4 Make a line plot to display 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. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.	5.MD.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. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	6 SP.2 6.SP.4 and 6.SP.5c 2. 6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. Summarize and describe distributions. 4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 5. Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Student Friendly Language:

I can represent data in a line plot to display a data set of measurements in a fractions of a unit.
I can interpret the data on a line plot to solve problems.
I can identify benchmark fractions.

Know (Factual)	Understand (Conceptual) I want students to understand that:	Do (Procedural, Application, Extended Thinking)
• Measurement • Unit • Fractions • Benchmark Fractions • Operations of fractions • Line plot • Scale *please note there is a difference between a line plot and a line graph	The use of operations with fractions to solve problems. A line plot is and how to create one. How to collect and display data in a line plot. They can use operations of fractions to solve problems from data on a line plot. Knowing benchmark fractions like 1/2, 1/4 and 1/8 can help them visualize and solve problems. How to find the mean of fractions based on a line plot.	Collect, display, and formulate conclusions in regards to data that is presented in fractions of 1/2, 14 and 18. Construct a line plot of consistent scale using fractional quantities. Interpret data in a line plot to solve problems. Distinguish the unit of measurement that is appropriate for the situation. Demonstrate and explain precision in measurement and choose appropriate tools for measurement.

Key Vocabulary:

Line plot, fractions, operations, scale, weight, length, volume, (Customary and Metric Units), data, mean/average, precision, benchmark fractions

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?

Statistics
Displaying data for a presentation or report

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	**Cluster:**	Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**Grade level:**	5

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
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.	5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	G.6.2 - Find the volume of a right rectangular prism by packing it with unit cubes of the appropriate unit fraction edge lengths and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find the volumes of right rectangular prisms with fractional edge lengths in the context of solving real world and mathematical problems.

Student Friendly Language:

I can recognize that all solid figures have volumes.
I can demonstrate and explain that a cube that measures one unit on each side is called one cubic unit.
I can recognize that cubic units are used to measure volume.
I can explain that to measure volume means I pack a solid figure with cubic unit cubes without any gaps or overlaps. The number of unit cubes in the figure is its volume.

Know (Factual)	Understand (Conceptual)	Do (Procedural, Application, Extended Thinking)
• volume • solid figure • cubic units • pack	Volume is an attribute of solid figures and volume can be measured in cubic units. A cubic unit measures one unit on each side. Some examples of cubic units are cubic inches, cubic centimeters, cubic feet and cubic yards. When finding the volume of a solid figure, unit cubes must be packed in the solid figure with no gaps or overlaps.	Recognize volume as an attribute of solid figures. Identify a cube with side length of 1 unit as a 'unit cube'. Use manipulatives to model finding the volume of a solid figure by filling a solid figure with unit cubes. Construct a model of a unit cube.

Key Vocabulary:

cubic units, volume, gaps, overlaps, unit, packed

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?

How many shoe boxes full of baseball cards can I put on my closet shelf?
How many candy bars are in the box that I am selling as a fundraiser?
Packing and shipping goods.

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Domain:	MEASUREMENT AND DATA	**Cluster:**	Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**Grade level:**	5

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
4.MD.3 3. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 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.*	5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	6.G.2 2. Solve real-world and mathematical problems involving area,surface area, and volume. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Student Friendly Language:
I can measure volume using a unit cubes and improvised units. I can measure the volume of combined rectangular prisms. I can distinguish between which cubic measurements to use for a given situation.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
• Measure volume using cubic units • Volume is an attribut of solids	The volume of a solid is measured in cubic units and they can measure that volume in a variety of units. They can develop an image of cubic units.	Design a new school playground using measurements in fractions, formulas, and a computer program. Estimate the volume of a variety of rectangular prisms. Calculate the volume of a variety of rectangular prisms by counting unit cubes.

Key Vocabulary:
volume, measure, cubic unit, cubic in, cubic ft, cubic cm, formulas, face, estimate
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
Using volume-room dimensions in your classroom or playground. Pouring cement into a rectangular box for big slabs. Filling up a swimming pool. Filling up a silo with corn. Fill an aquarium. How much dirt in wheelbarrow. How much can a bathtub before it overflows. How to pack a suitcase to have it close.

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Domain:	MEASUREMENT AND DATA	**Cluster:**	Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	**Grade level:**	5

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
4.MD.3 3. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. 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.*	5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 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. b. Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems. c. Recognize volume as additive. Find volumes of solid 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.	6.G.2 2. Solve real-world and mathematical problems involving area, surface area, and volume. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas *V = l w h* and *V = b h* to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Student Friendly Language:
I can use manipulatives to measure the volume of right rectangular prisms. I can use the volume formulas to determine the volume of right rectangular prisms. I can decompose solid figures into smaller right rectangular prisms. I can add the volumes of several right rectangular prisms to determine the volume of the original figure.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
• right rectangular prism • v =l x w x h • v = b x h • measure volume	Volume can be found in a variety of ways. Formulas can be used to find volume. The relationship between the total volume and the area of the base. Volume of an original figure can be found by adding the area of the bottom of the cube and adding layers of unit cubes to that bottom layer.	Organize unit cubes to find the volume of right rectangular prisms. Calculate the volume of right rectangular prisms using the volume formulas. Decompose a 3-D figures into right rectangular prisms in order to find the volume of the entire 3-D figure. Compare area and volume and recognize volume as additive..

Key Vocabulary:
volume, right rectangular prism, length, width, height, formula, <u>cubic units</u>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
A construction worker/ carpenter who needs to create a foundation for a building and fill it with concrete. The volume of concrete to make steps. Filling a swimming pool with water Blowing foam insulation into a wall