



National Center and State Collaborative

Mathematics Instructional Families – Measurement

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The National Center and State Collaborative (NCSC) is applying the lessons learned from the past decade of research on alternate assessments based on alternate achievement standards (AA-AAS) to develop a multi-state comprehensive assessment system for students with significant cognitive disabilities. The project draws on a strong research base to develop an AA-AAS that is built from the ground up on powerful validity arguments linked to clear learning outcomes and defensible assessment results, to complement the work of the Race to the Top Common State Assessment Program (RTTA) consortia.

Our long-term goal is to ensure that students with significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for post-secondary options. A well-designed summative assessment alone is insufficient to achieve that goal. Thus, NCSC is developing a full system intended to support educators, which includes formative assessment tools and strategies, professional development on appropriate interim uses of data for progress monitoring, and management systems to ease the burdens of administration and documentation. All partners share a commitment to the research-to-practice focus of the project and the development of a comprehensive model of curriculum, instruction, assessment, and supportive professional development. These supports will improve the alignment of the entire system and strengthen the validity of inferences of the system of assessments.



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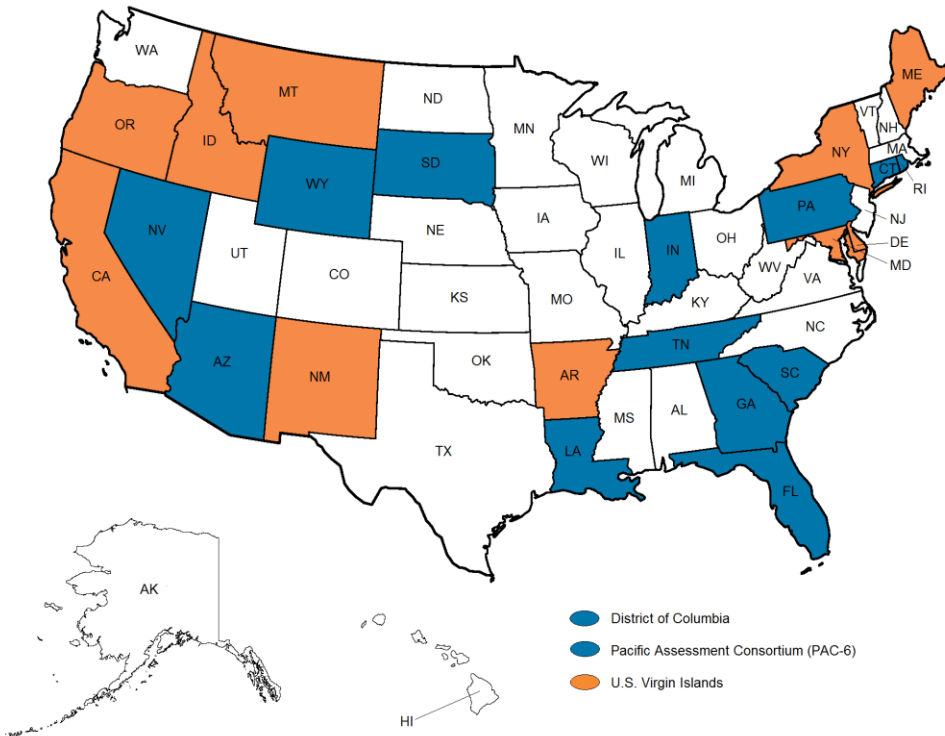
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NCSC is a collaborative of 15 states and five organizations.

The states include (shown in blue on map): Arizona, Connecticut, District of Columbia, Florida, Georgia, Indiana, Louisiana, Nevada, Pacific Assessment Consortium (PAC-6)¹, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, and Wyoming.

Tier II states are partners in curriculum, instruction, and professional development implementation but are not part of the assessment development work. They are (shown in orange on map): Arkansas, California, Delaware, Idaho, Maine, Maryland, Montana, New Mexico, New York, Oregon, and U.S. Virgin Islands.



*Core partner states are blue in color and Tier II states are orange in color.

¹ The Pacific Assessment Consortium (including the entities of American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Republic of Palau, and Republic of the Marshall Islands) partner with NCSC as one state, led by the University of Guam Center for Excellence in Developmental Disabilities Education, Research, and Service (CEDDERS).



National Center and State Collaborative

The five partner organizations include: The National Center on Educational Outcomes (NCEO) at the University of Minnesota, The National Center for the Improvement of Educational Assessment (Center for Assessment), The University of North Carolina at Charlotte, The University of Kentucky, and edCount, LLC.



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View of Learning Targets and Families across Grades

Distribution of Instructional Families: Measurement

(K-4) Elementary School Learning Targets					(5-8) Middle School Learning Targets				(9-12) High School Learning Targets
ME-1 Explore relationships among units, attributes, and measures within a system of measurement: <ul style="list-style-type: none"> Identify measurement attributes and units; Use measurement attributes to describe and compare objects, situations, or events. 					ME-1 Extend understanding of attributes and units: <ul style="list-style-type: none"> Make conversions within measurement systems; Relate measurement attributes, measures, models, and formulas. 				ME-1 Explore measurable attributes, measurement systems and processes of measurement of more complex or abstract quantities.
E.ME-2 Apply appropriate techniques (iteration and tiling), tools (standard and non-standard), and formulas (area and perimeter) to determine or estimate measurements.					M.ME-2 Apply appropriate techniques, strategies, and formulas to solve problems involving measurements (including derived measurements and rates).				H.ME-2 Apply and analyze techniques at an appropriate level of precision and use formulas to quantify or interpret abstract events, objects, and situations.
K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS

Sorting and Classifying	Measuring Using Tools	Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
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View of Learning Targets, Families, and CCCs by Grade-band

Overview of CCCs: Measurement

(K-4) Elementary School Learning Targets				
E.ME-1 Explore relationships among units, attributes, and measures within a system of measurement: <ul style="list-style-type: none"> Identify measurement attributes and units; Use measurement attributes to describe and compare objects, situations, or events. 				
E.ME-2 Apply appropriate techniques (iteration and tiling), tools (standard and non-standard), and formulas (area and perimeter) to determine or estimate measurements.				
Sorting and Classifying	Measuring Using Tools	Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
K	Grade 1	Grade 2	Grade 3	Grade 4
K.ME.1a1 Describe objects in terms of measurable attributes (longer, shorter, heavier, lighter...) <i>K.MD.1</i>	1.ME.1a2 Identify minutes and hours on a digital clock <i>1.MD.3</i>	2.ME.1a3 Select appropriate unit of measurement to measure an object (ruler or yard stick; inches or feet) <i>2.MD.1</i>	3.ME.2e1 Select appropriate tool for measurement: liquid volume, area, time, money <i>3.MD.2</i>	4.ME.2e4 Select appropriate tool for measurement: mass, length, angles <i>4.MD.6</i>
	1.ME.1b3 Order up to 3 objects based on a measurable attribute (height, weight, length) <i>1.MD.1</i>	2.ME.1a5 Tell time to the nearest $\frac{1}{2}$ hour using digital clocks <i>1.MD.3</i>	3.ME.1a1 Tell time to the nearest 5 minutes using a digital clock <i>2.MD.7</i>	4.ME.2e5 Construct a given angle <i>4.MD.6</i>
K.ME.1b1 Sort objects by characteristics (e.g., big/little, colors, shapes, etc.) <i>K.MD.3</i>	1.ME.1b4 Compare the lengths of two objects indirectly by using a third object <i>1.MD.1</i>	2.ME.1c2 Measure the attributes (length, width, height) of an object using 2 different size units <i>2.MD.2</i>	3.ME.1d1 Use tiling and addition to determine area <i>3.MD.7a</i>	4.ME.2e6 Measure right angles using a tool (e.g., angle ruler, protractor) <i>4.MD.6</i>
K.ME.1b2 Compare 2 objects with a measurable attribute in common to see which object has more/less of the attribute (length, height, weight) <i>K.MD.2</i>	1.ME.1c1 Compare 2 units of measurement and identify which unit would require more or less when measuring a selected object. (I can measure with paper clips or markers, which unit will require more to measure the table?) <i>1.MD.2</i>	2.ME.1c3 Recognize that units can be decomposed into smaller units <i>2.MD.3</i>	3.ME.1d2 Measure area of rectilinear figures by counting squares <i>3.MD.6</i>	4.ME.1d3 Use tiling and multiplication to determine area <i>3.MD.7a</i>
		2.ME.2b2 Select appropriate tools and demonstrate or identify appropriate measuring techniques <i>2.MD.1</i>	3.ME.1f1 Select appropriate units for measurement (liquid volume, area, time, money) <i>3.MD.2</i>	4.ME.1f3 Select appropriate units for measurement: mass, length, angles <i>No CCSS linked</i>

(K-4) Elementary School Learning Targets

E.ME-1 Explore relationships among units, attributes, and measures within a system of measurement:

- Identify measurement attributes and units;
- Use measurement attributes to describe and compare objects, situations, or events.

E.ME-2 Apply appropriate techniques (iteration and tiling), tools (standard and non-standard), and formulas (area and perimeter) to determine or estimate measurements.

Sorting and Classifying	Measuring Using Tools	Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
K	Grade 1	Grade 2	Grade 3	Grade 4
	1.ME.2a2 Use time to sequence up to 3 events, using a digital or analog clock <i>1.MD.3</i>	2.ME.2a3 Estimate the length of an object using units of feet and inches <i>2.MD.3</i>	3.ME.2e2 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch <i>3.MD.4</i>	4.ME.1f4 Select appropriate units for the value of a set of coins or dollars <i>No CCSS linked</i>
	1.ME.2a1 Measure using copies of one object to measure another <i>1.MD.2</i>	2.ME.2c1 Determine whether a situation calls for a precise measurement or an estimation <i>Not listed</i>	3.ME.2e3 Measure to solve problems using number lines and ruler to 1 inch, ½ inch, or ¼ of an inch <i>3.MD.4</i>	4.ME.2g1 Determine whether a situation calls for a precise measurement or an estimation (distance, volume, mass, time, money) <i>3.MD.2</i>
	1.ME.2b1 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object end to end <i>1.MD.2</i>	2.ME.2a4 Solve one step subtraction problems involving the difference of the lengths of 2 objects in standard length units <i>2.MD.4</i>	3.ME.1a2 Solve word problems involving the addition and subtraction of time intervals of whole hours or within an hour (whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) <i>3.MD.1</i>	4.ME.1g2 Solve word problems using perimeter and area where changes occur to the deminsions of a rectilinear figure <i>4.MD.2</i> <i>4.MD.3</i>
		2.ME.1a4 Solve word problems using dollar bills, quarters, dimes, nickles, or pennies <i>2.MD.8</i>	3.ME.1f2 Add to solve 1 step word problems <i>3.MD.2</i>	4.ME.2h1 Apply the formulas for area and perimeter to solve real-world problems <i>3.MD.7a</i> <i>3.MD.8</i> <i>4.MD.3</i>

(K-4) Elementary School Learning Targets

E.ME-1 Explore relationships among units, attributes, and measures within a system of measurement:

- Identify measurement attributes and units;
- Use measurement attributes to describe and compare objects, situations, or events.

E.ME-2 Apply appropriate techniques (iteration and tiling), tools (standard and non-standard), and formulas (area and perimeter) to determine or estimate measurements.

Sorting and Classifying	Measuring Using Tools	Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
K	Grade 1	Grade 2	Grade 3	Grade 4
		2.ME.1b5 Solve word problems involving the difference in standard length units 2.MD.4	3.ME.1g1 Identify a figure as getting larger or smaller when the dimensions of the figure change 3.MD.8	
			3.ME.2h1 Use addition to find the perimeter of a rectangle 3.MD.8	4.ME.2f1 Complete a conversion table for length and mass within a single system 4.MD.1
			3.ME.2i1 Estimate liquid volume 3.MD.2	
			3.PRF.1f1 Determine the equivalence between number of minutes and the fraction of the hour (e.g., 30 minutes = $\frac{1}{2}$ hour) 3.MD.1	4.ME.1g2 Solve word problems using perimeter and area where changes occur to the dimensions of a rectilinear figure 4.MD.2 4.MD.3
			3.PRF.1f 2 Determine the equivalence between the number of minutes and the number of hours (e.g., 60 minutes = 1 hour) 3.MD.1	

Overview of CCCs: Measurement

(5-8) Middle School Learning Targets			
M.ME-1 Extend understanding of attributes and units: <ul style="list-style-type: none"> • Make conversions within measurement systems; • Relate measurement attributes, measures, models, and formulas. 			
M.ME-2 Apply appropriate techniques, strategies, and formulas to solve problems involving measurements (including derived measurements and rates).			
Problem Solving Using Measurement Process		Perimeter, Area and Volume Problems	Scaling and Unit Conversions
Grade 5	Grade 6	Grade 7	Grade 8
5.ME.1a1 Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches) 4.MD.1	6.ME.2a3 Apply the formula to find the area of triangles 6.G.1 6.ME.2b2 Decompose complex shapes (polygon, trapezoid, pentagon) into simple shapes (rectangles, squares, triangles) to measure area 6.G.1	7.ME.2d1 Apply formula to measure area and circumference of circles 7.G.4	8.ME.2f1 Apply the Pythagorean theorem to determine lengths/distances in real-world situations 8.G.7
5.ME.2b1 Use filling and multiplication to determine volume <i>Not listed</i>	6.ME.2b3 Decompose complex 3-D shapes into simple 3-D shapes to measure volume 5.MD.5a	7.ME.2c1 Solve one step real-world measurement problems involving area, volume, or surface area of two- and three-dimensional objects 7.G.6	8.ME.2d2 Apply the formula to find the volume of 3-dimensional shapes (i.e., cubes, spheres, and cylinders) 8.G.9
5.ME.2b2 Apply formula to solve one step problems involving volume 5.MD.5b	6.ME.1c1 Find the area of a 2-dimensional figure and the volume of a 3-dimensional figure 6.G.2	7.ME.1d1 Solve problems that use proportional reasoning with ratios of length and area 7.G.1	8.ME.1e2 Compare area and volume of similar figures 8.G.4
5.ME.2a1 Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass 5.MD.1	6.ME.1a2 Identify the appropriate formula (i.e., perimeter, area, volume) to use when measuring for different purposes in a real life context 6.G.1 6.G.2	7.ME.2e1 Solve one step real-world problems related to scaling 7.G.1 7.ME.2e2 Solve one step problems involving unit rates associated with ratios of fractions 7.RP.1	8.ME.1e1 Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings) 8.G.4

(5-8) Middle School Learning Targets

M.ME-1 *Extend understanding of attributes and units:*

- *Make conversions within measurement systems;*
- *Relate measurement attributes, measures, models, and formulas.*

M.ME-2 *Apply appropriate techniques, strategies, and formulas to solve problems involving measurements (including derived measurements and rates).*

Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions	
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Grade 5	Grade 6	Grade 7	Grade 8
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5.ME.1b1 Convert standard measurements of time <i>5.MD.1</i>	6.ME.2a2 Solve one step real-world measurement problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours) <i>6.RP.3b</i>	7.PRF.1e1 Determine unit rates associated with ratios of lengths, areas, and other quantities measured in like units <i>7.RP.1</i>	
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5.ME.1b2 Convert standard measurements of length <i>5.MD.1</i>	6.ME.1b4 Complete a conversion table for length, mass, time, volume <i>6.RP.3d</i>		
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5.ME.1b3 Convert measurements of mass <i>5.MD.1</i>	6.ME.1b5 Analyze table to answer questions <i>6.RP.3d</i>		
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Overview of CCCs: Measurement

(9-12) High School Learning Targets		
<i>H.ME-1 Explore measurable attributes, measurement systems and processes of measurement of more complex or abstract quantities.</i>		
<i>H.ME-2 Apply and analyze techniques at an appropriate level of precision and use formulas to quantify or interpret abstract events, objects, and situations.</i>		
Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
HS		
H.ME.1a1 Determine the necessary unit(s) to use to solve real-world problems <i>N.Q.1</i>		
H.ME.1a2 Solve real-world problems involving units of measurement <i>N.Q.1</i>		
H.ME.2a1 Describe the accuracy of measurement when reporting quantity (you can lessen your limitations by measuring precisely) <i>N.Q.3</i>		
H.ME.1b1 Describe the relationship between the attributes of a figure and the changes in the area or volume when 1 attribute is changed <i>G.MG.1</i>		
H.ME.1b2 Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute <i>A.REI.3</i>		
H.ME.2b4 Apply the formula to the area of a sector (e.g., area of a slice of pie) <i>G.C.5</i>		
H.ME.2b5 Apply the formula of geometric figures to solve design problems (e.g., designing an object or structure to satisfy physical restraints or minimize cost) <i>G.MG.3</i>		
H.ME.2b1 Determine the dimensions of a figure after dilation <i>A.CED.1</i>		

View by Instructional Families and CCSS Domains

Instructional Families: Measurement

CCSS Domain Name: Measurement	
Sorting and Classifying	Measuring Using Tools
K.ME.1a1 Describe objects in terms of measurable attributes (longer, shorter, heavier, lighter...) <i>K.MD.1</i>	1.ME.1b4 Compare the lengths of two objects indirectly by using a third object <i>1.MD.1</i>
K.ME.1b1 Sort objects by characteristics (e.g., big/little, colors, shapes, etc.) <i>K.MD.3</i>	1.ME.1c1 Compare 2 units of measurement and identify which unit would require more or less when measuring a selected object. <i>1.MD.2</i>
K.ME.1b2 Compare 2 objects with a measurable attribute in common to see which object has more/less of the attribute (length, height, weight) <i>K.MD.2</i>	1.ME.2a2 Use time to sequence up to 3 events, using a digital or analog clock <i>1.MD.3</i>
1.ME.1a2 Identify minutes and hours on a digital clock <i>1.MD.3</i>	2.ME.1a5 Tell time to the nearest $\frac{1}{2}$ hour using digital clocks <i>1.MD.3</i>
1.ME.1b3 Order up to 3 objects based on a measurable attribute (height, weight, length) <i>1.MD.1</i>	2.ME.1c2 Measure the attributes (length, width, height) of an object using 2 different size units <i>2.MD.2</i>
2.ME.1a3 Select appropriate unit of measurement to measure an object (ruler or yard stick; inches or feet) <i>2.MD.1</i>	2.ME.1c3 Recognize that units can be decomposed into smaller units <i>2.MD.3</i>
3.ME.2e1 Select appropriate tool for measurement: liquid volume, area, time, money <i>3.MD.2</i>	2.ME.2b2 Select appropriate tools and demonstrate or identify appropriate measuring techniques <i>2.MD.1</i>
4.ME.2e4 Select appropriate tool for measurement: mass, length, angles <i>4.MD.6</i>	2.ME.2a3 Estimate the length of an object using units of feet and inches <i>2.MD.3</i>
	2.ME.2c1 Determine whether a situation calls for a precise measurement or an estimation <i>Not listed</i>
	3.ME.1a1 Tell time to the nearest 5 minutes using a digital clock <i>2.MD.7</i>

CCSS Domain Name: Measurement

Sorting and Classifying	Measuring Using Tools
	3.ME.1d1 Use tiling and addition to determine area 3.MD.7a
	3.ME.1d2 Measure area of rectilinear figures by counting squares 3.MD.6
	3.ME.1f1 Select appropriate units for measurement (liquid volume, area, time, money) 3.MD.2
	3.ME.2e2 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch 3.MD.4
	4.ME.2e5 Construct a given angle 4.MD.6
	4.ME.2e6 Measure right angles using a tool (e.g., angle ruler, protractor) 4.MD.6
	4.ME.1d3 Use tiling and multiplication to determine area 3.MD.7a
	4.ME.1f3 Select appropriate units for measurement: mass, length, angles <i>No CCSS linked</i>
	4.ME.1f4 Select appropriate units for the value of a set of coins or dollars <i>No CCSS linked</i>

Instructional Families: Measurement

CCSS Domain Name: Measurement		
Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
2.ME.2a4 Solve one step subtraction problems involving the difference of the lengths of 2 objects in standard length units <i>2.MD.4</i>	3.ME.2h Use addition to find the perimeter of a rectangle <i>3.MD.8</i>	1.ME.2a1 Measure using copies of one object to measure another <i>1.MD.2</i>
2.ME.1a4 Solve word problems using dollar bills, quarters, dimes, nickles, or pennies <i>2.MD.8</i>	3.ME.2i1 Estimate liquid volume <i>3.MD.2</i>	1.ME.2b1 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object end to end <i>1.MD.2</i>
2.ME.1b5 Solve word problems involving the difference in standard length units <i>2.MD.4</i>	4.ME.1g2 Solve word problems using perimeter and area where changes occur to the deminsions of a rectilinear figure <i>4.MD.2</i> <i>4.MD.3</i>	3.PRF.1f1 Determine the equivalence between number of minutes and the fraction of the hour (e.g., 30 minutes = $\frac{1}{2}$ hour) <i>3.MD.1</i>
	4.ME.2h1 Apply the formulas for area and perimeter to solve real-world problems <i>3.MD.7a</i> <i>3.MD.8</i> <i>4.MD.3</i>	3.PRF.1f2 Determine the equivalence between the number of minutes and the number of hours (e.g., 60 minutes = 1 hour) <i>3.MD.1</i>
3.ME.2e3 Measure to solve problems using number lines and ruler to 1 inch, $\frac{1}{2}$ inch, or $\frac{1}{4}$ of an inch <i>3.MD.4</i>	5.ME.2b1 Use filling and multiplication to determine volume <i>Not listed</i>	4.ME.2f1 Complete a conversion table for length and mass within a single system <i>4.MD.1</i>
3.ME.1a2 Solve word problems involving the addition and subtraction of time intervals of whole hours or within an hour (whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) <i>3.MD.1</i>	5.ME.2b2 Apply formula to solve one step problems involving volume <i>5.MD.5b</i>	4.ME.1g2 Solve word problems using perimeter and area where changes occur to the dimensions of a rectilinear figure <i>4.MD.2</i> <i>4.MD.3</i>
3.ME.1f2 Add to solve 1 step word problems <i>3.MD.2</i>	6.ME.2a3 Apply the formula to find the area of triangles <i>6.G.1</i>	5.ME.2a1 Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass <i>5.MD.1</i>

CCSS Domain Name: Measurement		
Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
3.ME.1g1 Identify a figure as getting larger or smaller when the dimensions of the figure change <i>3.MD.8</i>	6.ME.2b2 Decompose complex shapes (polygon, trapezoid, pentagon) into simple shapes (rectangles, squares, triangles) to measure area <i>6.G.1</i>	5.ME.1b1 Convert standard measurements of time <i>5.MD.1</i>
4.ME.2g1 Determine whether a situation calls for a precise measurement or an estimation (distance, volume, mass, time, money) <i>3.MD.2</i>	6.ME.2b3 Decompose complex 3-D shapes into simple 3-D shapes to measure volume <i>5.MD.5a</i>	5.ME.1b2 Convert standard measurements of length <i>5.MD.1</i>
5.ME.1a1 Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches) <i>4.MD.1</i>	6.ME.1c1 Find the area of a 2-dimensional figure and the volume of a 3-dimensional figure <i>6.G.2</i>	5.ME.1b3 Convert measurements of mass <i>5.MD.1</i>
8.ME.2f1 Apply the Pythagorean theorem to determine lengths/distances in real-world situations <i>8.G.7</i>	6.ME.1a2 Identify the appropriate formula (i.e., perimeter, area, volume) to use when measuring for different purposes in a real life context <i>6.G.1</i> <i>6.G.2</i>	6.ME.2a2 Solve one step real-world measurement problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours) <i>6.RP.3b</i>
H.ME.1a1 Determine the necessary unit(s) to use to solve real-world problems <i>N.Q.1</i>	7.ME.2d1 Apply formula to measure area and circumference of circles <i>7.G.4</i>	6.ME.1b4 Complete a conversion table for length, mass, time, volume <i>6.RP.3d</i>
H.ME.1a2 Solve real-world problems involving units of measurement <i>N.Q.1</i>	7.ME.2c1 Solve one step real-world measurement problems involving area, volume, or surface area of two- and three-dimensional objects <i>7.G.6</i>	6.ME.1b5 Analyze table to answer questions <i>6.RP.3d</i>
H.ME.2a1 Describe the accuracy of measurement when reporting quantity (you can lessen your limitations by measuring precisely) <i>N.Q.3</i>	8.ME.2d2 Apply the formula to find the volume of 3 dimensional shapes (i.e., cubes, spheres, and cylinders) <i>8.G.9</i>	7.ME.1d1 Solve problems that use proportional reasoning with ratios of length and area <i>7.G.1</i>
	8.ME.1e2 Compare area and volume of similar figures <i>8.G.4</i>	7.ME.2e1 Solve one step real-world problems related to scaling <i>7.G.1</i>

CCSS Domain Name: Measurement		
Problem Solving Using Measurement Process	Perimeter, Area and Volume Problems	Scaling and Unit Conversions
	H.ME.1b1 Describe the relationship between the attributes of a figure and the changes in the area or volume when 1 attribute is changed <i>G.MG.1</i>	7.ME.2e2 Solve one step problems involving unit rates associated with ratios of fractions <i>7.RP.1</i>
	H.ME.1b2 Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute <i>A.REI.3</i>	7.PRF.1e1 Determine unit rates associated with ratios of lengths, areas, and other quantities measured in like units <i>7.RP.1</i>
	H.ME.2b4 Apply the formula to the area of a sector (e.g., area of a slice of pie) <i>G.C.5</i>	8.ME.1e1 Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings) <i>8.G.4</i>
		H.ME.2b5 Apply the formula of geometric figures to solve design problems (e.g., designing an object or structure to satisfy physical restraints or minimize cost) <i>G.MG.3</i>
		H.ME.2b1 Determine the dimensions of a figure after dilation <i>A.CED.1</i>