Geometry and Measurement

Interesting Items

Which subclusters will we choose for review?	What are common errors and misconceptions we can help students avoid?	Which items will we use?
Angle Relationships Supporting: 7.11(C)	• confusing complementary and supplementary angles* • solving an equation for a value, but not using that value to determine the solution to the problem	7.11(C) 2023 item 22 7.11(C) 2022 item 18 7.11(C) 2017 item 24
Similarity Readiness: 7.5(C) Supporting: 7.5(A)	• using an additive relationship with similar figures or scale drawings instead of using multiplicative reasoning* • confusing corresponding sides with corresponding angles and vice versa* • confusing sides of similar shapes when figures are inscribed, rotated, or flipped*	7.5(C) 2022 item 5 7.5(C) 2019 item 33 7.5(C) 2018 item 16 7.5(C) 2018 item 32 7.5(C) 2016 item 42 7.5(A) 2021 item 11 7.5(A) 2018 item 4 7.5(A) 2017 item 39
Conversions Supporting: 7.4(E)	*See Proportional Reasoning TEKS Cluster Quickstart Guide*	
Area Readiness: 7.9(C) Supporting: 7.9(D)	• confusing the radius with the diameter of a circle* • using the circumference formula when calculating the area of a circle or vice versa* • not considering the numerical relationship of a semicircle or quarter circle in relation to an entire circle* • not being able to decompose a composite figure into rectangles, squares, parallelograms, etc.* • not being able to use indirect measurement to determine missing dimensions of geometric shapes within the composite figure* • not being able to work backwards or perform multiple steps to determine combined area or missing area* • forgetting the "$\frac{1}{2}$" in the formula when finding the area of triangles and trapezoids as parts of composite figures* • not being able to measure lengths with a ruler to the nearest half or fourth of a whole unit* • confusing the lateral height of a two-dimensional face with the height of the three-dimensional shape • forgetting to multiply by $\frac{1}{2}$ to determine the area of the base when calculating the total surface area of a triangular prism/pyramid	7.9(C) 2023 item 26 7.9(C) 2022 item 4 7.9(C) 2018 item 14 7.9(C) 2018 item 34 7.9(C) 2016 item 35 7.9(C) 2016 item 52 7.9(D) 2023 item 24 7.9(D) 2019 item 11
Circles Readiness: 7.9(B) Supporting: 7.5(B) Not tested: 7.8(C)	• confusing the radius with the diameter of a circle* • using the circumference formula when calculating the area of a circle* • using the area formula when calculating the circumference of a circle* • confusing squaring the radius and doubling the radius* • having difficulty determining the area of a circle when given composite figures* • attempting to describe pi as the ratio of the diameter to circumference instead of $\frac{C}{d}$ • completing only the first step in a multiple-step problem	7.9(B) 2023 item 8 7.9(B) 2022 item 24 7.9(B) 2021 item 37 7.9(B) 2018 item 23 7.9(B) 2017 item 32 7.5(B) 2023 item 11 7.5(B) 2019 item 26
Volume Readiness: 7.9(A) Not tested: 7.8(A), 7.8(B)	• forgetting the "$\frac{1}{2}$" in the formula when finding the area of a triangle* • confusing the lateral height of a face with the height of the shape* • forgetting to multiply by $\frac{1}{2}$ to determine the area of the base when calculating the volume of a triangular prism/pyramid* • not understanding that the "*B*" in the formula *V* = *Bh* represents the area of the base of the shape • identifying the wrong face of prism/pyramid as the base and applying the incorrect measurements to determining the area of the base • having trouble working backwards to find the height when given the volume*	7.9(A) 2023 item 34 7.9(A) 2021 item 21 7.9(A) 2019 item 5 7.9(A) 2018 item 10 7.9(A) 2017 item 13 7.9(A) 2017 item 22

Which stimuli will we emphasize?

Word Problem*	Verbal Description*	Chart/ Table	Graph	Equation/ Expression*	Manipulatives	Diagram/ Image*	Number Line	Base Ten Blocks	Measurement Tool*	Formula	Geometric Figures*

Which words will we prioritize?

adjacent angle
angle*
area of the base*
circumference*
combined area*
complementary angles
composite figure
congruent*
corresponding angle*/side length
customary
(mile*/yard/feet*/inch*; gallon/quart/pint/cup/ fluid ounce*; ton/pound/ounce) diameter*
diameter*
equation*
formulas (area):
- A = ½ bh
- A = bh
- A = ½ (b_1 + b_2)

formulas (volume):
- V = Bh
- V = 1/3Bh
- V = Bh (for rectangular prisms only)

formulas:
- C = 2πr
- C = πd
- A = πr^2

height*
inequality
lateral surface area*
metric
(kilometer*/meter/ centimeter*/ millimeter*; liter/milliliter; kilogram /gram*/milligram)
perimeter
proportion*
quarter circle
radius*
ratio*
rectangular prism*
rectangular pyramid
scale* factor
semicircle*
similar shape*
square pyramid*
straight angle
supplementary angles*
total surface area*
trapezoid*
triangle*
triangular prism*
triangular pyramid*
unit rate
variable
vertical angle
volume*
π (pi)*

Have we prepared students to respond to different item types?

Match Table Grid (2 pts)	Multiselect (2 pts)	Equation Editor (1-2 pts)	Text Entry (1-2 pts)	Graphing (1-2 pts)	Number Line (1-2 pts)	Inline Choice (1-2 pts)	Hot Spot (1-2 pts)	Drag and Drop (1-2 pts)	Multiple Choice (1 pt)