Unit 10 - Geometry - Deconstructing TEKS

5. Question Stems

- ❖ Why can you use either formula $V = \ell wh$ or $V = Bh$ to find the volume of a rectangular prism?
- ❖ How can you use area and volume equations to solve real-world problems?

4. Learning Targets
I can…

- find the area of a rectangle
- find the area of a parallelogram
- find the area of a trapezoid
- find the area of a triangle
- find the volume of a right rectangular prism

1. TEKS: What do want students to know and be able to do?

6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers

6.10A model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts

3. Specific Skills
6.8D
In Grade 5, students represented and solved problems related to perimeter, area, and volume.

Instructional Focus: determine solutions for problems involving the area of rectangles, parallelograms, and trapezoids and volume of right rectangular prisms where dimensions are positive rational numbers.

Instruction should move from the concrete development of the various areas and volume formulas to applying those formulas to solve problems. Problems need to include rational numbers (decimals and fractions). Instruction should vary the context of the problems (i.e. given different dimensions find the area/volume and given the area/volume find specific dimensions).

It is important for students to understand why area is represented in square units and volume is represented in cubic units.

A formula is an equation that shows a relationship among certain quantities.

2. Academic Vocabulary

parallelogram	dimensions	two-dimensional
figure	rectangle	
Squared	cubic unit	width
Area	perpendicular	
Formula	volume	rectangular prism
square unit	equation	
area of base (B) height	solution	
three-dimensional figure	cubed	
base (2-D figure)	triangle	
Length	parallel	
Trapezoid	base (3-D figure)	

Students will use the following area formulas.

- Area of a rectangle: $A = \ell w$ and $A = bh$
- Area of a square: $A = s^2$

- Area of a parallelogram: $A = bh$
- Area of a triangle: $A = \frac{1}{2} bh$ or $A = (bh)/2$
- Area of a trapezoid: $A = \frac{1}{2} h(b_1 + b_2)$

$V = Bh$ or $V = \ell wh$
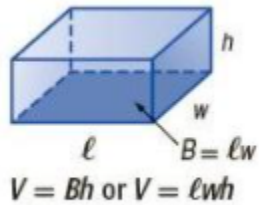
6. Common Misconceptions
- ❖ Be aware that students may not understand how to use the formulas for calculating area and volume.
- ❖ Watch for students who complete only the first step of a multi-step problem.
- ❖ Look for students who label problems with an incorrect unit of measure.
- ❖ Watch out for different units of measure given in the same problem
- ❖ Knowing the difference between the actual height of a rectangle and parallelogram vs. the "slant" height…