

Breaking Down a Mathematics Standard

KAS: KY.6.G.2

What is the domain/conceptual category/big idea? Geometry

Standards for Mathematical Practice

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| <p>MP.1. Make sense of problems and persevere in solving them.</p> <p>MP.2. Reason abstractly and quantitatively.</p> <p>MP.3. Construct viable arguments and critique the reasoning of others.</p> <p>MP.4. Model with mathematics.</p> | <p>MP.5. Use appropriate tools strategically.</p> <p>MP.6. Attend to precision.</p> <p>MP.7. Look for and make use of structure.</p> <p>MP.8. Look for and express regularity in repeated reasoning.</p> |
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Cluster: What is the broader understanding that the standard plays a role in building? Solve real world mathematical problems involving area, surface area & volume

Standards	Clarifications
<ul style="list-style-type: none"> Identify the target of the standard: <ul style="list-style-type: none"> conceptual understanding procedural skill/fluency <u>application</u> <p>Consider how the target of the standard will have an impact on instruction and assessment. (For more information, refer to p. 7, 10 and 15 of KAS for Mathematics.) <u>Application: Students are provided with a valuable context for learning & the opportunity to solve problems in a relevant & meaningful way. Students learn to select an efficient method to find a solution & determine whether a solution makes sense by reasoning & critical thinking.</u></p> <ul style="list-style-type: none"> What key mathematics should students know and be able to do? <u>Find the volume of a right rectangular prism with rational number edge lengths.</u> <p><u>*Must go beyond procedural skills → students should have opportunities to interpret the context & make decisions about what mathematics is appropriate to apply.</u></p>	<ul style="list-style-type: none"> What are the specific representations/strategies that will need to be considered when planning instruction? <u>rational number side lengths & include problems in which volumes are found using lengths/areas AND problems in which lengths are found using volumes</u> What are the possible misconceptions that will need to be addressed during instruction? <u>Students who merely memorize formulas, without an underlying conceptual understanding, may struggle to determine when a realistic context calls for the volume of a figure (may inadvertently give the area or surface area).</u> <p>Coherence: Previous Grade → Current Standard → Upcoming Grade</p> <ul style="list-style-type: none"> How does this standard build off of prior learning? <u>KY.5.MD.5 → build conceptual understanding of volume for right rectangular prisms, inc. volume is additive</u> How does this standard support future learning? <u>KY.7.G.6 → extend for volume of pyramids & right prisms KY.8.G.9 → extend volume to cones & cylinders & spheres</u> How does this standard connect to other standards (or even other clusters or domains)? <u>students evaluate expressions that arise KY.6.EE.2 → from formulas used in real world problems.</u>

Attending to the Standards for Mathematical Practice

- How are students engaging in the mathematical practices as they learn this content? (For more information, refer to p. 12-15 of KAS for Mathematics.)
- MP.2. → Make sense of quantities & their relationships in problem situations (consider units involved & meaning of quantities)
- MP.5. → Use technological tools/concrete models to explore concepts
- MP.6. → Communicate precisely to others, are careful about specifying units of measure, examine claims, use definitions