Grade: 6 FCPS 2025-2026 Math Grade 6 Topic 7

6th Grade Topic 7: Solve Area, Surface Area, and Volume Problems	Estimate Time Frame: 20 days
Essential Standards: 6.G.1, 6.G.2, 6.G.4 Assessment Resource: enVision Topic 7	

FCPS Supporting Links	Additional Supporting Links
Pacing Guide 6th Grade Topic 7 Standards Resource with Sample Formative Assessments enVision 6th Grade Topic 7 Standards Crosswalk Resource FCPS P-12 Mathematics Guidance Document FCPS Achievement & Trauma-Informed Strategies in the Classroom	Kentucky Academic Standards KSA Blueprint Target of the Standards - conceptual, procedural & application Three-Reads Routine Notice and Wonder Routine **MILC Resources Topic 7: Solve Area, Surface Area, and Volume Problems** ***enVision Teacher Guide: page 394A to 394D for specific Topic 7 Focus-Coherence-Rigor***

Big Ideas
Solve real-world and mathematical problems involving area, surface area, and volume.

Essential Questions	Common Preconceptions/Misconceptions
What are the meanings of surface area and volume, and how can surface area and volume be found? What is the relationship between a parallelogram's area and a triangle's area? How can you find the areas of trapezoids and kites? How are area and volume related to a mathematical net?	Students often need help finding the area of composite figures, even after decomposing them. It may be helpful to have students write the areas of the joined shapes directly in the composite figure to help track the parts. Color coding the decomposition could also help students with their understanding.

Standards for Mathematical Practices	Kentucky Interdisciplinary Literacy Practices (KILP)
MP.1. Make sense of problems and persevere in solving them. **MP.2. Reason abstractly and quantitatively.** **MP.3. Construct viable arguments and critique the** reasoning of others. MP.4. Model with mathematics. **MP.5. Use appropriate tools strategically.** **MP.6. Attend to precision.** MP.7. Look for and make use of structure. MP.8. Look for and express regularity in repeated reasoning. ***enVision Teacher Guide: page 394E for specific Topic 7 Math Practice suggestions***	1. Recognize that text is anything that communicates a message. 2. Employ, develop, and refine schema to understand and create text. 3. View literacy experiences as transactional, interdisciplinary and transformational. 4. Utilize receptive and expressive language arts to better understand self, others, and the world. **5. Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.** **6. Collaborate with others to create new meaning.** **7. Utilize digital resources to learn and share with others.** **8. Engage in specialized, discipline-specific literacy practices.** **9. Apply high level cognitive processes to think deeply and critically about text.** 10. Develop a literacy identity that promotes lifelong learning. *Incorporating texts into math instruction fosters interdisciplinary learning for a more engaging educational experience.*

Essential Standards	Sample Learning Intentions & Success Criteria	HQIR/Resource Considerations
Cluster: Solve real-world and mathematical problems involving area, surface area and volume.		
KY.6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing them into rectangles or decomposing them into triangles and quadrilaterals; apply these techniques in the context of solving real-world and mathematical problems. **Conceptual** **Procedural** **Application** **Clarifications:** Area of the listed shapes may be thought of as a rectangle with larger area, subtracting the area's exterior to the actual shape to obtain the true area, or as a composite area of smaller triangles and rectangles which sum to the	We are learning to find the area of triangles, quadrilaterals, and polygons. • I can decompose other polygons into standard polygons to find the area. • I can use formulas to find the area of polygons. • I can solve real world problems involving areas of polygons.	• Topic 7 Lesson 7-1 • Topic 7 Lesson 7-2 • Topic 7 Lesson 7-3 • Topic 7 Lesson 7-4 • 3-Act Math Topic 7: That's a Wrap • Topic 7: Let's Investigate! On the Surface (can be used with Lesson 7-6) • Topic 7 Lesson 7-5 • Topic 7 Lesson 7-6

true area of the given shape. Students recognize that given shapes can be combined to find area or decomposed to find area, such as surface area, and one method may be more efficient than the other. Coherence KY.5.NF.4→KY.6.G.1→KY.7.G.6 **MP.1, MP.6, KILP.1, KILP.4, KILP.8** *Supporting Standard: KY.6.G.2*		• Brainingcamp Task (Lesson 7-4) "Area of Polygons" • enVision Language Support Handbook
KY.6.G.4 Classify three-dimensional figures, including cubes, prisms, pyramids, cones, and spheres. ☐ **Conceptual** ❑ **Procedural** ❑ **Application** **Clarifications:** Emphasis is on classifying three-dimensional shapes and specifically the attributes of each shape that make it unique to its classification. Coherence KY.6.G.4→KY.7.G.6 **MP.2, MP.3, KILP.1, KILP.2**	We are learning to classify three-dimensional figures. • I can identify cubes, prisms, pyramids, cones, and spheres. • I can group shapes by their characteristics.	• Topic 7 Lesson 7-5 • enVision Language Support Handbook
KY.6.G.2 Find the volume of a right rectangular prism with rational number edge lengths. Apply the formulas V = lwh and V = Bh to find volumes of right rectangular prisms with rational number edge lengths in the context of solving real-world and mathematical problems. ☐ **Conceptual** ☐ **Procedural** ☐ **Application** **MP.2, MP.5, MP.6, KILP.1, KILP.4, KILP.8**	We are learning to apply volume formulas to solve real-world and mathematical problems involving right rectangular prisms. • I can use formula V = lwh to find volume when the length, width, or height are rational numbers. • I can use formula V = Bh to find volume when the area of the base or height are rational numbers.	• Topic 7 Lesson 7-8 • enVision Language Support Handbook

Coherence KY.5.MD.5→KY.6.G.2→KY.7.G.6		

Attending to the Standards for Mathematical Practice

Students make sense of real-world problems involving area, volume and surface area. Students begin to understand any shape can be thought of as a series of simpler shapes, merely stitched together to form a composite shape (MP.1). They begin to visualize the volume of any given shape as a bounded region, filled with smaller cubes of equal size (MP.2) and understand, by doing so, they approximate the volume of a three-dimensional shape with integer edge lengths (MP.5) and then, continue this reasoning by precisely finding the volume of figures with rational edge lengths (MP.1, MP.6, MP.8). Generalizing the study of geometric shapes to the coordinate plane gives students a tool to precisely calculate side lengths and area of shapes. When two different units are given within a problem, students know to use previous knowledge of conversions to make the units match before solving the problem (MP.4, MP.5, MP.6).

Supporting Standards

n/a

Vocabulary

base - The top and bottom of a prism.
edge - The line segment where two faces intersect.
face - A flat polygon-shaped surfaces
net - A 2-dimensional figure that can be folded into a polyhedron.
polyhedron - A 3-dimensional solid figure made of flat polygon-shaped surfaces
vertex - The point where edges meet.

*Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. This example is not comprehensive.
** Mathematical Practices (A.MP.1- 8) should be evidenced at some point throughout each unit, depending on the explored tasks. It is important to note that MP. 2 should support learning in every lesson.
*** Modeling Standards: Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (★). The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to *all* standards in that group.