Bridging for Math Strength Resources

Standards of Learning Curriculum Framework

Standard of Learning (SOL) 7.6a Compare and contrast quadrilaterals based on their properties.

Student Strengths	Bridging Concepts	Standard of Learning
The students can solve practical problems involving perimeter. The students can identify right angles and determine the measure of a right angle.	6.7c: The student will solve problems, including practical problems, involving area and perimeter of triangles and rectangles. 5.8a: The student will solve practical problems that involve perimeter, area, and volume in standard units of measure	Students can compare and contrast quadrilaterals based on their properties.

Understanding the Learning Trajectory

Big Ideas:

- Classification categorization, sets and non-sets are used to group things in our world.

Formative Assessment:

- VDOE Just in time Quick Check SOL 7.6a (Word) / PDF / Desmos

Important Assessment Look Fors:

- The student can correctly determine which properties apply to each type of quadrilateral
- The student can determine similarities and differences between two or more quadrilaterals based on the

quadrilaterals's properties
- The student can determine lines of symmetry for each type of quadrilateral

Purposeful Questions:

- Which shapes share properties with parallelograms?
- How do you determine whether a shape is a square or a rhombus?
- How are these two types of quadrilaterals similar? How are they different?

Bridging Activity to Support Standard	Instructional Tips
Routine **Convince Me That** **Which One Doesn't Belong**	Slides 9, 13, 34, 63, 66, 67: Students must justify the various statements regarding classifications of quadrilaterals and use their properties to support the justifications Shape 27: Students use the properties of quadrilaterals to justify their argument regarding which shape they believe does not belong with the others.
Rich Tasks **Trapezoids**	Students will explore the similarities and differences between a trapezoid and a parallelogram and consider which properties would apply to each type of quadrilateral.
Games/Tech Desmos 7.6a Polygraph: Advanced Quadrilaterals **Property Chart** **Completing Quadrilaterals**	This Polygraph is designed to spark vocabulary-rich conversations about quadrilaterals. Students will identify important features of quadrilaterals and describe these features to their peers. Students will use cards as manipulatives to sort and identify the properties of different types of quadrilaterals Students will complete a drawing for a specific quadrilateral. This game covers more quadrilaterals than those identified in this VA SOL strand. Teachers can print off the activity and eliminate any that are not applicable before assigning to the students.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 7.6a - Classifying Quadrilaterals (Word) / PDF Version
- VDOE Algebra Readiness Remediation Plans
  - Quadrilaterals (Word) / PDF
- VDOE Word Wall Cards: Grade 7 (Word) | (PDF)
  - Quadrilateral Relationships
  - Parallelogram
  - Rhombus
  - Rectangle
  - Square
  - Trapezoid
- Other VDOE Resources
  - Geometry Quadrilaterals Lesson 1: Classifying Quadrilaterals Worksheet [eMediaVA]
  - Geometry Quadrilaterals Lesson 1: Classifying Quadrilaterals Worksheet Key [eMediaVA]
- Desmos Activity
  - Polygraph: Advanced Quadrilaterals

Learning Trajectory Resources:

Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. *Journal of Mathematics Education Leadership*, *7*(3), NCSM.

Clements, D. H., & Sarama, J. (2019). Learning and teaching with learning trajectories [LT]2. Marsico Institute, Morgridge College of Education, University of Denver. https://www.learningtrajectories.org/

Common Core Standards Writing Team. (2019). Progressions for the Common Core State Standards for Mathematics. Tucson, AZ: Institute for Mathematics and Education, University of Arizona.

Richardson, K. (2012). How Children Learn Number Concepts: A Guide to Critical Learning Phases. Bellingham: Math Perspectives Teacher Development Center.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally.* (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - Standard of Learning Curriculum Framework (SOL)