Bridging for Math Strength Resources

Standards of Learning Curriculum Framework

Standard of Learning (SOL) 2.13 Identify, describe, compare, and contrast plane and solid figures (circles/spheres, squares/cubes, and rectangles/rectangular prisms).



Student Strengths	Bridging Concepts	Standard of Learning
The student can Identify, trace, describe, and sort plane figures (triangles, squares, rectangles, and circles) according to number of sides, vertices, and angles; and b) identify and describe representations of circles, squares, rectangles, and triangles in different environments, regardless of orientation, and explain reasoning.	Students recognize more 3D shapes (solids), using informal and some formal names. Recognizes faces as 2D shapes. 3D Shape Recognizer Through hands-on exploration, students can compare and contrast 3D shapes. Students can develop spatial relationships of shapes through hands-on exploration.	Students can identify, describe, compare, and contrast plane and solid figures (circles/spheres, squares/cubes, and rectangles/rectangular prisms).

Understanding the Learning Trajectory

Big Ideas:

- Two- and three-dimensional objects with or without curved surfaces can be described, classified, and analyzed by their attributes (Charles, 2005).
- The relationship between plane and solid figures, such as the square and the cube or the rectangle and the rectangular prism helps build the foundation for future geometric study of faces, edges, angles, and vertices. (VDOE Curriculum Framework Grade 2)

Formative Assessment:

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- VDOE Just in time Quick Check SOL 2.13 PDF / Desmos

Important Assessment Look Fors:

- Student can identify names of 2D and 3D shapes
- Student can state a common attribute of a 2D and 3D shape
- Student can identify the number of edges, vertices, and faces of a 3D shape
- Student can identify the shapes of the faces in a 3D shape.

Purposeful Questions:

- What is different about these two shapes? What is the same?
- How is a 2D shape different from a 3D shape?
- Where can you find these shapes? Classroom? Playground?
- How would you describe this shape to someone?

Bridging Activity to Support Standard	Instructional Tips
Routine **Alike and Different**	Present students with two different shapes and ask them to think about and suggest the similarities and differences between the objects. Consider recording the students' ideas on the board in a T-chart. This routine promotes classroom conversations that will strengthen students skills in connecting and communicating mathematical ideas.
Rich Tasks **Shape Hunt**	Class works together to find cubes, rectangular prisms, and spheres from everyday items. Student discussion builds new vocabulary and supports geometric reasoning to identify and compare shapes. Focus on how students are describing 3D shapes.
Games **Shapes All Around Us**	Online game that supports names of 3D shapes. Consider making an attribute chart with students to support them in playing the game.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 2.13 - The Shape Show (Word) / PDF Version
- VDOE Word Wall Cards: Grade 2 (Word) | (PDF)

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)