



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework\(SOL\)](#)

Standard of Learning (SOL) K.12 Sort and classify objects according to one attribute.



Student Strengths	Bridging Concepts	Standard of Learning
Group and sort like concepts together by various attributes/properties.	Match and sort shapes (circle, triangle, rectangle, and square). Describe how shapes are similar and different. Recognize and name shapes (circle, triangle, rectangle, and square).	Sort and classify objects according to one attribute.

Understanding the Learning Trajectory

Big Ideas:

- Children intuitively recognize similarities between objects or situations, leading to the ability to group similar and dissimilar objects.
- Students may begin by grouping objects by general resemblance, and later by formal attributes (size, color, shape, etc.) but may switch attributes during a sort.
- Students learn to follow verbal instructions for sorting objects and fixing a sorted set. Early on they make mistakes in these sorting activities, but eventually they consistently and accurately sort by a single attribute and re-classify a sorted set by a different attribute.

Formative Assessment:

- VDOE [Math Strength Assessment K.12 \(Seesaw\)](#)
- VDOE [Mathematics Quick Check K.12 \(PDF\)](#)
- VDOE [Mathematics Quick Check K.12 \(Google Slides\)](#)

Important Assessment Look Fors:

- Student can articulate their rationale for sorting the objects.
- Student classifies the objects into piles based on a single attribute (ie. color OR shape OR size).
- Student name the attribute used to sort the objects.

Purposeful Questions:

- Why did you put these shapes in a set together?
- What do these shapes have in common?
- How do you know where this shape should go?
- What other ways might you sort these shapes?

Bridging Activity to Support Standard	Instructional Tips
Routine Same but Different -- from Arlington Public Schools	This routine presents students with different real world objects and allows for them to explain how the objects are the same but different. There are sentence frames provided to help students express their thinking.
Rich Tasks VDOE Mixed-Up Math Blocks	When launching this task with students, the teacher may want to show students a picture of a bedroom that is messy and organized to activate students' prior knowledge. In addition, the teacher will want to provide students with sentence frames to help them communicate their thinking.
Games Goodie Bags , Illustrative Mathematics	This collaborative game should be played in heterogeneous pairs that form small groups of 6 to 8 so that students can support each other. This activity allows for students to practice their skills of ordering and comparing while also sorting the objects in each of the baggies. In the beginning, the teacher may tell students to sort by color, size, or shape. As students become more proficient in sorting, the teacher may provide students with objects that can be sorted in multiple ways and have them explain how they sorted the objects.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [K.12 - Sorting Collections](#) (Word) / [PDF Version](#)
- VDOE Word Wall Cards: [Kindergarten \(Word\)](#) | [\(PDF\)](#)
 - Smaller/Larger o Same
- [Shape Hunt](#) (activity)
- [Which One Doesn't Belong](#) (Shape 1, 2, 6) (Routine)
- [Sort & Count II](#) (Game)

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)