Students are introduced to the concept of a hierarchy when sorting shapes based on their properties.

**COMMON CORE STANDARD(S)**

5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.

**DURATION**

Two 45-minute classroom periods

Engage and Explore, Explain, Elaborate page 1—one 45-minute classroom period

Elaborate page 2, Evaluate—second 45-minute classroom period

**MATERIALS**

Assorted polygons cut from cardstock, one for each student.

**ENGAGE AND EXPLORE**

Have students stand along one wall of the classroom, each holding a cardstock polygon. Ask students to take 1 step forward if their shape has each given property, in decreasing order of a hierarchy. For example:

- your shape is a polygon
- your shape has 4 sides
- your shape has 4 right angles
- your shape has equal side lengths
The students will end up in rows with shapes that have the same properties as other shapes of the row they are in, and all shapes in rows behind them. Tell students that when shapes share a common property, they may form a group of shapes with a specific name. Tell them that they’ll learn more about these properties and groups in the rest of the lesson.

**EXPLAIN**

**WATCH THE GENERATION GENIUS CLASSIFY SHAPES IN A HIERARCHY (QUADRILATERALS & TRIANGLES) VIDEO AS A GROUP**
Facilitate a conversation using the Discussion Questions.

**ELABORATE**

Direct students to use their new understanding to complete the practice problem worksheets. Page 1 contains bare mathematical problems to solidify understanding of the process. Page 2 contains application problems for students to apply the process to solve real-world problems.

**EVALUATE**

Have students gather in groups of 2 or 4 to compare and discuss their answers to the problems. Allow students enough time to communicate with their peers about their process and their thinking. Encourage students to use correct mathematical language when discussing their process. Have each group choose two questions they want more information about, or they want to discuss as a class.

When groups are ready, take questions from students. Encourage groups to answer questions brought up by other groups.

Students can play the online Kahoot! quiz game located below the video. It provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz, or the exit ticket questions. All these resources are located below the video in the assessment section.