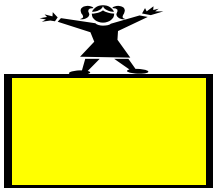

PRACTICE TASK: Shape Sort

Approximately 2-3 days (adapted from Van de Walle 7.1 & 7.2)

STANDARDS FOR MATHEMATICAL CONTENT

MCCK.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind,* and *next to*.

MCCK.G.2 Correctly name shapes regardless of their orientations or overall size.

MCCK.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").

MCCK.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.

BACKGROUND KNOWLEDGE

Many students in kindergarten struggle to think of a triangle other than an equilateral triangle. This task provides students with an opportunity to explore and sort different shape triangle. Identifying the triangles by their geometric name (scalene, isosceles, and right) is not the focus but the attributes that make them different.

ESSENTIAL QUESTIONS

- What are some ways that you can sort shapes?
- What is an attribute?
- What makes shapes different from each other?

MATERIALS

- *Shape Sort* game board

GROUPING

Whole group, small group or partners

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Comment: the following series of tasks could be taught in sequence and over several days.

Like and Unlike Attributes (2 players)
Before giving students the directions place 2 counters on two different shapes on the game board.

Each player is given 5 counters. On the first turn, have each partner place a counter on a different shape. Players take turns identifying the common attributes between the two shapes. Players alternate identifying attributes until one player is unable to identify a common attribute. (Example: If player 1 is unable to identify a common attribute, player 2 gets both counters). The counters are removed from the board and the steps are repeated until all ten counters have been played. The player that collects the most counters at the end of the game wins.

Making a Shape Family (3-4 players)
Have one student in the group pick a target shape and cover it with a counter. The first shape covered is the family shape. One single attribute must be identified and that attribute becomes the Grandfather Shape and has the "Family Name" (or target attribute). Each student in the group takes a turn covering a shape that belongs in the target shape family according to the common attribute. Every shape that becomes part of the family must have the same attribute (Example: each shape in the target family has only 3 corners). After no more shapes can be added to the family, have students identify another attribute from the grandfather shape. Players take turns removing counters from the shapes that do not have the second attribute that matches the grandfather shape.

Draw My Rule: (small group/whole group)
Students could draw a shape that would fit the rule made for "Shape Family" or teacher could give students rule and have them draw a shape that matches the rule. (Example: the rule for my shape is that is has 3 straight lines and none of them are the same size.

What's My Rule? (3-4 players)
One player covers 3 shapes on the board that fit a secret attribute/rule. Once the shapes are covered, the other members of the group take turns trying to identify the secret rule. The player that identifies the secret shape becomes the player that covers the shapes and determines the secret rule for the other players to identify.

FORMATIVE ASSESSMENT QUESTIONS

- What was the rule you used to sort?
- Could you have sorted the shapes another way?

- What is an attribute?

DIFFERENTIATION

Extension

- Students can be asked to sort shapes that have more than one matching attribute.
- Have them sort just the quadrilaterals or triangle.

Intervention

- Find shapes that are similar sorting attributes more accessible to students
- Have the students identify a list of attributes and have them pick an attribute from the list to help guide.