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| Unit Name: Where Has Poly-gon? | Unit Length: 1 week | | |
| Overview:  In this unit, students participate in a vertically aligned, campus-wide exploration of polygons. At first grade, students will investigate relationships among two-dimensional figures and describe distinctive attributes of a triangle, rectangle and square (as well as the non-polygonal circle) using formal geometric language. This geometric study will be extended in later units.  According to research, students need to go beyond merely seeing and naming pictures of shapes. Students must be able to distinguish attributes from one shape to another and describe them using formal geometric vocabulary (NCTM, 1999).  National Council of Teachers of Mathematics. (1999). *Navigating through geometry in prekindergarten-grade 2.* Reston, VA: National Council of Teachers of Mathematics, Inc. | | | |
| ***DESIRED RESULTS*** | | | |
| **Grade 1 TEKS:**  1.6 Geometry and spatial reasoning. The student uses attributes to identify two- and three-dimensional geometric  figures. The student compares and contrasts two- and three-dimensional geometric figures, or both.  1.6A Describe and identify two-dimensional geometric figures including circles, triangles, rectangles, and squares (a  special type of rectangle).  1.6C Describe and identify two- and three-dimensional geometric figures in order to sort them according to a given  attributes using informal and formal language.  **Grade 1 Process TEKS:**  1.11 Underlying processes and mathematical tools. The student applies Grade 1 mathematics to solve problems  connected to everyday experiences and activities in and outside of school.  1.11D Use tools such as real objects, manipulatives, and technology to solve problems.  1.12 Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using  informal language.  1.12A Explain and record observations using objects, words, pictures, numbers, and technology.  1.12B Relate informal language to mathematical language and symbols. | | **Critical Vocabulary**  attributes  square  rectangle  triangle  sides  vertex  vertices | |
| **Enduring Understandings (Big Ideas) and Guiding Questions:**  Two-dimensional geometric figures can be identified and described by attributes.   * *Figures can be identified by attributes.*   + What shape has straight lines?   + What shape is round?   + How would you describe the corners on a triangle? Rectangle? * Informal and formal vocabulary is used to describe the attributes of shapes. * *Corners/vertices and sides are used to describe two-dimensional figures.*   + How many vertices are on a triangle? Rectangle? * Geometric figures are named according to their attributes.   + How do the attributes of a figure help us name the shape? | | | |
| **Learning Goals and Objectives**.   * Students will sort two-dimensional shapes by their attributes. * Students will accurately label the attributes of two-dimensional shapes. * Student will be able to complete all goals and objectives with 85% accuracy. | | **Materials Needed**   * colored cardstock * glue sticks * construction paper * overhead shapes * circle, square, rectangle, and triangle die-cuts * scissors * chart paper | |
| ***ASSESSMENT PLAN*** | | | |
| **Performance Tasks**   * Students will sort a variety of two-dimensional geometric figures by common attributes and orally explain the sorting process. * Students will describe selected figure(s) orally using formal geometric vocabulary. (1.6A, 1.6C) | | | |
| ***LEARNING PLAN*** | | | |
| **Engage:** Students will conduct open sort of two-dimensional shapes on sorting mats with “talk out” about their categories and decision making for quick evaluation.  **Explore:** Students will explore and sort for examples and non-examples of each of the shapes. Day One: circles (non polygons) and Polygons, Day Two: squares, rectangles, and triangles.  **Questions students might contemplate**:   1. What do you notice about (shape)? 2. What is the same about the shapes you are sorting? 3. What is different about the shapes you are sorting?   **Explain:** AS NECESSARY BASED ON TEACHER OBSERVATION  Formally introduce language of geometry to name and label the attributes of the two-dimensional shapes.  **Elaborate** Students will work together in pairs or small groups to create the posters of two-dimensional shapes and their attributes.  **Explain/Evaluate:** Students use posters created in class to sort, identify and label attributes of two-dimensional shapes including rectangles, squares, triangles and circles (non polygons).  **Evaluate/Extend:** Students bring photos, magazine pics, etc. of examples of two-dimensional shapes for group sort and display. | | | 10-15 minutes  30 - 40 minutes/day, Day 1 and 2, with emphasis on different two-dimensional shape each day  45 minutes, Day 3  40 minutes, Day 4  40 minutes, Day 5 |
| ***Modifications: Modifications are embedded in the activity due to the open-ended nature of the lesson objectives that lends itself to supported instruction as well as extension. Central to both is the fact that the student takes the lead. Students will work and collaborate with other students.*** | | | |