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| Unit Name: Where has “Poly Gon”? | | Unit Length: 2-3 weeks | |
| Overview: Exploration and discovery of polygons in the real world. This particular lesson is on angles. | | | |
| ***DESIRED RESULTS*** | | | |
| **TEKS and SEs**  Objective 3: The student will demonstrate an understanding of geometry and spatial reasoning.  TEK 4. 8 A. Identify right, acute, and obtuse angles | **Critical Vocabulary**  Angle, acute angle, endpoint, intersecting lines, line, line segment, obtuse angle, right angle, ray, vertex | | |
| **Enduring Understandings (Big Ideas)**  Angles are an outcome of the intersection of two lines. These angles can be identified as right, obtuse, or acute, according to their measurements. Angles are an important attribute of polygons. | **Essential Questions**  What is an angle?  How do we differentiate between the three different angles?  What effect does the angle have on the shape of the polygon?  How are polygons identified by their angles?  What are some of the significant angles in our class (clock), world(bridges)? | | |
| **Learning Goals and Objectives**  Students will understand angles as they relate to geometry, specifically polygons. They will be able to identify, classify, and generate acute, right, and obtuse angles. | **Materials Needed**  Isometric dot paper,  Angle notes and practice page  Protractor  www.youtube.com/watch?v=kOrgnioDh-g | | |
| ***ASSESSMENT PLAN*** | | | |
| **Performance Tasks**  Students will successfully identify angles of polygons. | **Other Evidence**  Students will be able to generate acute, obtuse and right angles. | | |
| ***LEARNING PLAN*** | | | |
| **Engage:** Show the youtube skateboard basic terminology video clip.  Do any of you skateboard? If so, can you identify this trick? (Teacher spins around a full turn and returns to the original position.) Some student will identify the trick as a 360. Can you identify this trick? (Teacher spins around only half way.) A student identifies a 180. I want to show you why they call these tricks 360 and 180. Teachers draws on the board a full circle and labels it 360 degrees. Then the teacher draws a semi-circle and labels it 180 degrees. What if I did two 180 tricks? Students calculate 360. What if I was just beginning to skateboard and I could not do a 180. Let’s say I could only do that half-way? What number would we call that? Divide 180 by 2. Ninety. Teacher diagrams for all to see 360 is a full circle, 180 is a half-circle, and 90 is a quarter circle. To understand why these tricks are given these number names, we can begin to discover the names of different angles. (Teacher outlines the right angle and labels it 90 degrees, post for later reference.)  **Explore:** What is an angle? An angle is the outcome of two lines intersecting at a vertex. We can measure and identify angles using a protractor. Put the bottom line of your protractor along the bottom line of the angle on your Angle Measurement sheet. Now, follow the other line until you are able to read the measurement. (Teacher models). Try this with your partners. Students practice measuring angles in groups with a protractor, teacher observes, monitors, discusses.  **Explain:** There are three terms used to identify angles. They are right, acute, and obtuse. These names are given to angles in relationship to their size. Remember the 180 skateboard trick? Well if we could only go half-way, we said that was a 90. Well, its actually called 90 degrees and it is the measurement of a right angle. Any angle with exactly 90 degrees is a right angle. Can you draw a right angle? What do you notice about this angle? Any angle that is greater than 90 degrees is called an obtuse angle? Let’s draw some. Any angle that is less than 90 degrees is called an acute angle. Let’s draw some. Now, I would like for you to label the angles you just measured as right, acute, or obtuse. (Allow students time, and then have then discuss their findings.)  **Elaborate:** When two lines meet they create an angle, which is named according to its size in relation to a right, or 90 degree angle. Let’s identify some angles in our classroom. (Have students report angles they see in the class and explain why they are right, acute, or obtuse). Have the students record their findings as they go.  **Evaluate:** Teacher will evaluate student understanding throughout the lesson. | | | Time  60 minutes |
| ***Extension: Students will use digital cameras to photograph and present to classmates. In effect, creating a portfolio of photographs of significant acute, obtuse, and, right angles in our school.***  ***Modifications: Students that need more support could manipulate angles on a geoboard.***  ***Students can also use geoboards on the national library of virtual manipulativs.*** | | | |