Lesson Plan Geometry

Objective: Students should already have a basic knowledge of geometric shapes, triangles. We will look at what different kinds of triangles there are. Then, identify angles as vertical, complementary, or supplementary and provide descriptions of these terms. After this is done students will get with partners and be ‘quizzed’ on these concepts.

Grade 6th
Time 30 minutes
Hook having the shapes seen with the stretchy fabric

Materials Needed long strips of stretchy fabric sewn together at the end making a circular shape of fabric. This fabric will be used to make shapes by having students arms and legs inside fabric making a shape with the outline of the fabric.

Explore and Investigate
Shapes
Start by having students explore different ways to make a triangle using their body. The definition of a triangle is having three angles. Explore making a triangle with different body parts. Adding a challenge to the body parts have them explore having two of their different body parts must be touching the floor, or in the air by using levels.
The next thing to explore is the size of the shape. Have them explore big triangle, then have them make the exact same angles in the triangle but only smaller.

Curriculum

Complementary and Supplementary Angles
A complementary angle of a triangle means that two angles add up to be 90 degrees, a supplementary angle adds up to 180 degrees. This exploration is done in partners. The first partner makes a triangle, the next partner has to make a complementary angle with one of the angles of the triangle so they add up to be 90 degrees. Have students explore their creativity by having them explore levels, meaning have them make a shapes horizontal and vertical. The last challenge is to not allow them to use certain body parts each time i.e. no arms, or no legs.

Movement
Have the students create their own triangles. Review with them what it means to rotate or translate an angle. (if time allows also use reflection, transformation, clockwise, and counterclockwise)
rotation (turn)—The image of a figure that has been “turned” as if on a wheel.
translation (slide)—The image of a figure that has been slid to a new position without flipping or turning.
reflection (flip)—The mirror image of a figure that has been “flipped” over a line.
transformation—The act of changing the form or appearance of an object.
clockwise—In the same direction as a clock’s hands move.
counterclockwise—in the opposite direction as a clock’s hands move.

Vertical Angle (if time allows)
Have students do these exercises in groups of two. We first identify what a vertical angle is. “Given a triangle, the vertical angle of a given side is the angle opposite that side.” Have one student create a triangle and the other point to the vertical angle. To explore their creative side have one student make the triangle, the other partner skips around the room until the drum is beat then the skipping partner must find someones triangle and put one body part while making a their own triangle shape on the vertical angle (make sure these are creative shapes not just putting a finger each time on vertical angle) Then that partner will freeze in their shape and partner 1 will move about the room. You can also play this in a game like musical chairs.

Create and Perform

Make a pattern for students to move throughout. There will be two partners again. Both partners will make a triangle with three angles. Then both partners will move towards each other while using rotation, translation, reflection, transformation etc. When they get to one another they will keep their triangles but combine them together to make a complementary angles. Have half of the students watch as the other half perform.