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Pre-K 4 & 5  
12 October 2016

**Topic: Triangles and Rectangles**

**Enduring Understandings:**

* Students will understand that rectangles have four straight lines, two that are longer and two that are shorter.
* Students will understand that rectangles have four corners and are made of four straight lines, just like squares.
* Students will understand that shapes are the same even when turned different directions.
* Students will understand that rectangles and squares are similar, but that squares have lines that are all the same.
* Students will understand that triangles have three straight lines that are closed and three corners.

**Essential Questions:**

* What attributes do triangles and rectangles have?
* How are triangle and rectangle attributes different and the same from other shapes like circles and squares?
* Are shapes the same when they are turned in different directions?

**Primary Content Objectives: (Learning target)**

* I can build triangles and rectangles.

**Virginia Foundations:**

* Measurement
  + a) Recognize attributes of length by using the terms longer or shorter when comparing two objects.
* Geometry
  + a) Match and sort shapes (circle, triangle, rectangle, and square).
  + b) Describe how shapes are similar and different.
  + c) Recognize and name shapes (circle, triangle, rectangle, and square).

**Assessment:**

The diagnostic assessment for this lesson is students previous testing about shapes. The formative assessments include discussion questions about previously learned shapes, questions about types of lines and corners, and ability to build based on learned knowledge.

**Materials and Resources:** four big line paper strips and four little line strips of paper for each student and teacher, shape cards, SMART board (or whiteboard or paper for low tech), testing data to see who knew their shapes at the beginning of the year (optional), SMART triangle/rectangle sort

**Key Vocabulary and Definitions:**

* Rectangle: shape made with four straight lines and four corners but two lines are longer and two lines are shorter
* Triangle: shape made with three straight lines and three corners

**Lesson Procedures:**

1. Today we are going to learn about two new shapes. Last time, we learned about circles and squares. (During the review, have students raise their hand quietly to speak if they know the answer. Count to five in your head to ensure all students get a chance to process the question).
   1. (Draw a curved line and a straight line) Do squares have curved or straight lines? How many straight lines? (Draw a square). Is this right? How many corners does it have? (Have a student come up and count them while touching each one, then count them together. Review corners if you need to, emphasizing straight lines make corners).
   2. What about circles, what kind of lines do they have? How many do they have? (Students may struggle with the idea of it being one curved line, and that’s okay. Draw the circle). How many corners does a circle have? (Have students show you zero with their hands).
   3. What about an oval like Humpty Dumpty? What does that look like? (See if a student knows that the oval is a “squished” circle. Keep oval quick, like less than 20 seconds).
2. Our new shapes are going to be rectangles and triangles. Our learning target is I can build triangles and rectangles (Point to yourself when you say the target then point to the students. Have them repeat if they have trouble saying it).
3. (Show rectangle shape card) Who knows what this is? (Allow students to call out, listening to who seems to know it. Repeat this with the triangle).
4. Let’s talk about what these new shapes are made of. (Draw a rectangle) So what shape is this? (call out) What kind of lines does a rectangle have? (Ask for quiet hands). Straight, right! How many straight lines? (Hands) We need 4 lines. Now check this out…I’ve got four lines, but are they all the same size? (Call out) No, so what do you notice? Are any of them the same? (Work through until a student can point out two and two then state it). How many corners are there? (Hands)
5. Does this shape look like a shape we already did? (Pause for call out, see if students can bounce off of each other to get to square for about 10 seconds). It looks kind of like a square, doesn’t it? (Draw a square next to the rectangle). Raise your hand and tell me something that is the same about these shapes (Repeat for different, cover type of lines, number of lines, size of lines, and corners).
6. Our next shape is a triangle. (Draw the triangle) Does it have curved or straight lines? (Show and allow call out). How many straight lines? (Pick a student to count the lines. Erase the triangle). Now watch me redraw the triangle (draw it). Are there any spaces or holes in the triangle? (Call out) When there are no holes, that means the shape is closed. Say closed (Have students repeat). Are our other shapes closed? (Allow call out, but switch to raised hands if students seem confused and talk through how there are no holes when we draw or build the shape).
7. Our learning target today is, “I can build rectangles and triangles.” (Have students repeat after you while you hold the target). So for my rectangle, I need four lines. Should they be big, small or both? (Allow call out, if they don’t say both, build a square and ask what it is for raised hands. Then ask how did you know? Emphasize the size of the lines. Build a rectangle, saying it’s like a road if you build it sideways and that you have to close it. Then build it like a building with a roof and floor.) Do you think you can do it? (Call out)
8. (Hand out four big lines and four little lines. Tell them the lines are at zero, meaning the lines are on the floor and we aren’t touching them). Build me a rectangle, please (See what students do, remind students to make the road or building then countdown to share with friends, even if they are wrong and have incorrect students look at a correct friend to fix their rectangle and explain why they had to change it). Build me another rectangle. So if you built a road, make a building and if you made a building, make a road (Count down to zero then build a triangle the same way, using keep the cows in the fence).
9. (Let students hit the target if they built both shapes on their own, letting them know if they didn’t get it this time, that’s okay, and they might get to hit the target next time).

**Accommodations and Extensions:** (Be sure to do the extensions during proximate reviews like at circle or greeting)

* Students could be accommodated by using more concrete lines like foam or wood. Students could be given a matching paper to match their lines to the shape on the paper. Some students may need to take a break between the discussion and the building depending on time spent discussing.
* Triangle and rectangle sort on SMART board, add in circles and squares for review later or as further extension.
* Shape cards, talking about orientation of shapes and they are still the same.

**Behavioral and organizational strategies:**

* Countdown to zero, zero being still with a listening body (sitting on bottom, eyes on teacher, listening, and quiet mouth)
* Super student beads and other positive reinforcement to encourage modeled behavior.
* Using the three steps to consequences: positive reinforcement, change the situation, consistent consequence.
* Varying call out and raising hands and moving/using hands to answer questions.
* Allowing students to take a break if they feel overwhelmed.
* Constant behavior reminders.