

Lesson Plan: Geometry

Name: ...

Mentor Teacher: ...

Grade Level: First Grade

School: ...

Title: How to use a geo-board

Objective: The students will be able to create sides (line segments) of a triangle on a geo-board using a rubber band as well as identify the three points of the triangle.

NCTM PreK-2 Math Standard: The student will be able to recognize geometric shapes and structures in the environment and specify their location on a geo-board.

Prerequisite Knowledge: Numbers and Letters

Virtual Manipulatives: SMART board → specially labeled geo-board

Physical Manipulatives: specially labeled geo-boards, rubber bands, grid pages, and pencils. Have extra grids just in case students need them.

Motivating Activity:

“Today we are going to learn how to use a geo-board. First I am going to give each of you a geo-board to explore with. Everyone will receive one rubber band.”

Allow the students to explore with the geo-boards for roughly about 10 minutes (give or take a few).

Developmental Activity:

“Ok, now that you have had a chance to explore with the geo-boards. We are going to find the different points on our geo-boards and eventually make shapes with your rubber bands.”

“Along the bottom of each of your geo-boards are the letters A, B, C, D, and E. Can everyone place his or her fingers on the letter “C?”

“Can everyone say the letters with me? A, B, C, D, E. Good Job!”

“Along the left side of each of your boards are the numbers 0, 1, 2, 3, and 4. We are going to use the numbers and letters to place our rubber bands around these pegs.” (As you are saying the letters and numbers point to them on the SMART board geo-board as well as the geo-board in your hand.)

“We are going to name the pegs on the geo-board. When we need to find a peg on the geo-board we begin with the letters on the bottom of the geo-board.”

“Can everyone put their fingers on the peg above the letter ‘A’? Then count up three pegs and put your finger on that peg. (Place your finger on the peg and show the students and have them copy what you did, by placing their fingers on ‘A3’ on their boards. Point to peg ‘A3’ on the geo-board. Use a colored pen and color in the peg.)

Proceed to point and find various pegs around the geo-board with the students. Some examples may be A3, D4, B1, C0, D2, etc. Call on a student to name a peg for everyone to find. Take a few different students ideas.

Point to a random peg, can a student name it? Point to C3, “Can I have a volunteer name this peg for me?”

Once the students have gotten the hang of finding pegs that you may name, ask them to find peg A2 and place their rubber band around that peg. Next, find peg C4 and wrap their rubber band around that peg. This will create a line across the geo-board from the two pegs. Once they have all created a line with their rubber bands between the two pegs give them the name of the third peg to finish the triangle. D1. Hold up your geo-board and show it to the students the triangle you have made with them.

“Does the triangle on your geo-boards match mine?” (You will also want to connect the dots on the SMART board to show the students for a larger visual for the students to see.)

Create another triangle on the geo-board. Call on students to tell what each of the three points of your triangle is. B2, E4, E1.

One more triangle if they are not getting the hang out it yet. B3, D4, C2.

Culminating Activity:

Pair the students together and have them practice making triangles together and naming the points.

Each of the students will use their own geo-board. Each of the students will receive a recording grid sheet with three grids on it. (Show image of grid sheet on SMART board) One partner will make a triangle and they both will draw that triangle on their grid papers in grid box 1. The other partner will create a triangle on his or her geo-

board and each student will draw the second triangle in the second box, grid box number 2.

“I am going to give each of you a grid sheet with three boxes on it. You and your partner will be using box 1 and box 2. Remember to leave box three empty, we will use it later.”

“After I pair each of you up, I would like you to practice with your partner naming the points the triangles you create on your geo-boards.”

“Once you and your partner have had a chance to practice the points, I would like each of you to create another triangle on your geo-board and draw it onto your grid paper.

Re-group the students and discuss how naming the points of their triangles went with their partners.

“How did naming the points of your triangles go? (Call on a student)”

“Did anyone have any trouble naming the points? What was hard about it?”

“Ok, we are going to practice naming the points of a few more triangles together.” Create a few more triangles with the students and have them name the points.

“Now that we have a had a little more practice naming and finding the points of a triangle; I am going to draw a triangle onto the geo-board and I would like you to draw the same triangle on your grid paper in the third box.”