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Professor Shipman

February 1, 2011

Day 1 Lesson Plan: Mathematics

Lesson: Introduction to Geometry

Date of Teaching: Feb. 1, 2011

Length: 30-45 minutes

Source: Original/Mrs. Poling

Age or Grade Level Intended: 2nd Grade

Academic Standard(s):
Mathematics:
- 2.4.2 Describe, classify, and sort plane and solid geometric shapes (triangle, square, rectangle, cube, rectangular prism) according to the number and shape of faces, and the number of edges and vertices. (Only working on underlined portion during this first lesson.)

Performance Objectives:
- By showing a picture of a triangle (and other plane shapes), the students will describe the plane shape orally by 1) identifying the number of edges and 2) identifying the number of vertices on the different shapes.
- Given the worksheet "Shapes," the students will correctly identify the 10 different shapes in the picture by coloring each shape with the 10 accurate colors (stated on the sheet).

Assessment:
- Since this is mostly review for the students, the only form of assessment will be an informal assessment. The teacher will observe during the learning time and whole group time of completing the worksheet. During this time, the teacher will make anecdotal notes as to who needs more attention in this area of geometry. Then, the teacher will review with any individual student during math game time at the end of the day.

Advanced Preparation by Teacher:
- 13 copies of the worksheet "Shapes"
- Laminated cut-outs (pictures) of different shapes- circle, square, triangle, rectangle, hexagon, star (I received these from cooperating teacher)
- Different colored crayons: yellow, blue, red, green, brown, pink, purple, orange, gray, black
- Front white board, dry erase markers

Procedure:

Introduction/Motivation:

Tell the students that today, we are going to review the names of different shapes and learn some new ways to describe these shapes. First, tell the students that the first way we will describe ALL of these shapes is by calling them "plane" shapes. Ask the students, "Who can give me the name of a plane shape?" Listen for answers. **(Bloom: Knowledge; Gardner: Verbal/Linguistic)** The students may choose to name a circle, square, rectangle, etc. After naming a plane shape, tell the students that a plane shape means that the shape is completely flat. Hold up a cube and a laminated picture of a square. Ask the students, "Which of these would be a plane shape?" Listen for answers. **(Bloom: Comprehension; Gardner: Verbal/Linguistic)** Tell the students that the picture of the square is plane shape because it is flat; the cube is NOT a plane shape. Then, tell the students that we are going to review some other plane shapes that they may already know.

Step-by-Step Plan:
1. Hold up the laminated picture of a triangle. Ask the students, "What is the name of this plane shape?" Listen for answers. **(Bloom: Knowledge; Gardner: Visual/Spatial, Verbal/Linguistic)**
2. Tell the students that this is a picture of a triangle. A triangle has 3 sides (run finger over the sides as you count them out loud).
3. Then, tell the students that a triangle also has 3 vertices. Ask the students, "What are the vertices on this triangle?" Listen for answers. **(Bloom: Knowledge; Gardner: Verbal/Linguistic)**
4. Tell the students that the term "vertices" means corners. Ask the students, "How many vertices/corners does a triangle have?" Listen for answers. **(Bloom: Knowledge/Comprehension; Gardner: Visual/Spatial, Verbal/Linguistic)**
5. Tell the students that we want to try to use the term "sides" when we are talking about the number of sides on a plane shape, and we also want to use the term "vertices" when talking about the number of corners on a shape.
6. Hold up the laminated picture of a rectangle. Ask the students, "What is the name of this plane shape?" Listen for answers. **(Bloom: Knowledge; Gardner: Verbal/Linguistic)**
7. Tell the students that this shape is a rectangle. Then, proceed to ask the students, "How many sides does this shape have?" Listen for answers. **(Bloom: Knowledge, Comprehension; Gardner: Visual/Spatial, Verbal/Linguistic)**
8. Allow a student to come up and count the sides out loud with the rest of the class. **(Bloom: Comprehension; Gardner: Bodily/Kinesthetic)**
9. Then, ask the students, "How many vertices does a rectangle have?" Listen for answers. **(Bloom: Comprehension; Gardner: Verbal/Linguistic, Visual/Spatial)**
10. Allow a student to come up and count the number of vertices aloud with the rest of the class.
11. Repeat steps 6-10 with the rest of the plane shapes (circle, hexagon, pentagon, star, etc.)
12. After reviewing the physical features of all of the plane shapes, hand out the activity worksheet titled, "Shapes."
13. To complete this worksheet, the students need to have different colored crayons (yellow, red, blue, etc.) Have the students collect their crayons from their desks.
14. Complete the worksheet aloud with the entire class. For number 1, the worksheet says, "Color the circles yellow. How many are there?" First, ask the students, "What does a circle look like?" Listen for answers. **(Bloom: Application; Gardner: Verbal/ Linguistic)**

15. Then, draw a picture of a circle on the board and instruct the students to color all of the circles yellow. Then, ask the students, "How many circles are there?" Listen for answers. **(Bloom: Application; Gardner: Verbal/Linguistic, Visual/Spatial, Mathematical/Logical)**
16. Repeat steps 15-16 for numbers 2-10 on the worksheet. Complete together as a class since this is for review.
17. After reviewing, the students can put their worksheets in their mailboxes to go home.

Closure:
Ask the students, "What types of shapes did we learn about today?" Listen for answers. **(Bloom: Evaluation; Gardner: Verbal/Linguistic)** Answer: Plane shapes. Then, remind the students that plane shapes means that the shapes are _____. Listen for answers. **(Bloom: Evaluation; Gardner: Verbal/Linguistic)** Answer: Plane shapes are flat. Then, quickly recap with the students to see if they took in the new vocabulary of *sides* and *vertices* today. Ask the students, "How many vertices does a square have?" Listen for answers. **(Bloom: Analysis; Gardner: Verbal/Linguistic)** Answer: 4 vertices. Then, ask the students, "How many sides does a circle have?" Listen for answers. **(Bloom: Analysis; Gardner: Verbal/Linguistic)** Answer: 0 sides because it is round with no vertices. After asking a few, brief review questions to reiterate the new vocabulary words (plane, sides, vertices), tell the students that they need to keep practicing the names of their plane shapes because tomorrow we are going to have some fun with shapes!

Adaptations/Enrichment:
- After talking with the cooperating teacher, we discussed how this entire classroom is basically an adaptation for every student in the class. The classroom only has 13 students because each of these students is behind grade level for one or more subject areas. To assist each of these students in the class, the teacher will continually review every concept over and over again, day after day because it is needed. For students who are showing less understanding, the teacher will pull those specific students aside during down time or math game time at the end of every day to provide more assistance.
- The teacher will also provide several hands-on, bodily kinesthetic activities for all of these students because it helps the students' understanding. Therefore, this lesson using manipulatives when discussing the shapes to provide better understanding. These lessons are treated a little differently than average lessons where the students work individually or alone because every student in this transition class needs the extra assistance.

Self-Reflection: I will reflect by answering these questions after the lesson
1. Did the students understand the concept of plane shapes?
2. Did the students understand the concept of edges and vertices?
3. What parts of this lesson will be important to review once more before teaching about solid figures?
4. What parts of this lesson did the students struggle with?
5. How can I improve this lesson for the future?

Shapes

Follow the instructions below.   **Name** _____
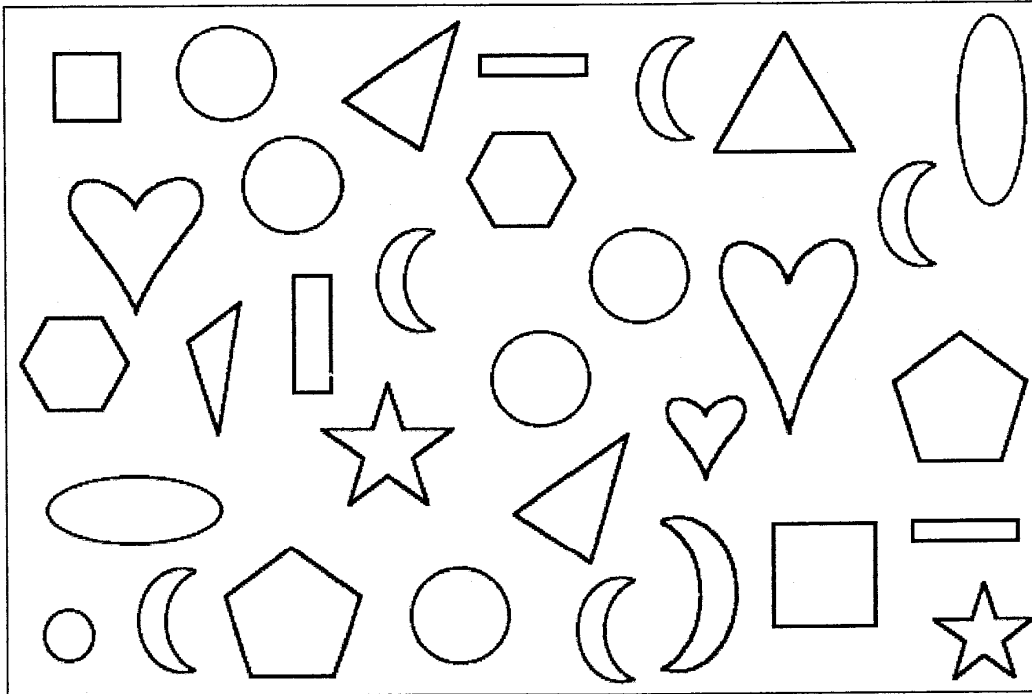
1. Color the circles yellow. How many are there?_____

2. Color the squares blue. How many are there?_____

3. Color the (non-square) rectangles red. How many?_____

4. Color the stars green. How many are there?_____

5. Color the pentagons brown. How many are there?_____

6. Color the hearts pink. How many are there?_____

7. Color the ovals purple. How many are there?_____

8. Color the triangles orange. How many are there?_____

9. Color the crescents gray. How many are there?_____

10. Color the hexagons black. How many are there? _____

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