



Instructor's Name: Morgan Schwarz

Subject: Mathematics

Grade: 3rd-5th Grade

Title of Lesson: Perimeter, Area, and Volume

Materials and Resources (including technology):

- Cheez-Its (About 20 for each student)
- Cheez-It Worksheets
- Smartboard
- Access to sinks for handwashing OR hand sanitizer
- Writing utensils
- Scratch paper

Standard(s) the Lesson will Address: Type out the source, number, and the text of the standard (s) addressed in this lesson

- 3.3.2.2 Find the perimeter of a polygon by adding the lengths of the sides.
- 3.3.2.3 Measure distances around objects
- 4.3.2.3 Understand that the area of a two-dimensional figure can be found by counting the total number of same size square units that cover a shape without gaps or overlaps. Justify why length and width are multiplied to find the area of a rectangle by breaking the rectangle into one unit by one unit squares and viewing these as grouped into rows and columns.
- 4.3.2.4 Find the areas of geometric figures and real-world objects that can be divided into rectangular shapes. Use square units to label area measurements.
- 5.3.2.3 Understand that the volume of a three-dimensional figure can be found by counting the total number of same-sized cubic units that fill a shape without gaps or overlaps. Use cubic units to label volume measurements.

Objective: State the CONDITION, the BEHAVIOR, and the CRITERIA. Label in () the predominant domain of **C** for Cognitive, **A** for Affective, or **P** for Psychomotor. DO NOT make every condition “at the conclusion of the lesson..”

- Cognitive: At the end of the lesson, students will understand that area is a property of two dimensional shapes.

- Cognitive: During the lesson, students will be able to recognize that a square is used as the standard unit for measuring area.
- Psychomotor: After the lesson, students will be able to accurately find the area of rectangles using same-sized units.
- Affective: During the lesson, students will be able to distinguish and solve problems involving the area of rectangles and squares.
- Affective: At the end of the lesson, students will have an understanding of real world applications for perimeter and area.
- Cognitive: At the end of the lesson, students will begin to think about how volume is related to perimeter and area.

Vocabulary:

Academic: Language needed by students to do the work in schools.

- Perimeter
- Area
- Volume

Content: Language the students need to learn to apply the content.

- Unit
- Squared

Anticipatory Set: How will you get the students ready and/or excited to accept instruction?

1. Start off with a rhombus on the board. State “We are going to briefly go over the shape of a rhombus, to clarify just what a rhombus is.” Go over the three points below about a rhombus with the students. Be sure to use different colored pens to provide visual aids for the three main points.
 - a. Like a square, a rhombus has four sides of equal length.
 - b. A rhombus has two pairs of parallel sides.
 - c. A rhombus has four angles, the angles opposite of each other are equal.
2. Transition to reiteration of what perimeter and area are. Ask the students to come up with their own definition of perimeter and area. Write it on the board.
3. Have students trace the perimeter of their desks, and rub the surface area of their desks for area.
4. Transition to a large grid graph paper background on the board. Discuss with the students how we use squares as a unit of measurement, and that we will not always have the luxury of graph paper to find the area of a shape.
5. Place some practice squares and rectangles on the board for the students to do with scratch paper.
6. When the students have found the area and perimeter of the practice problems, take volunteers to show their mathematical thinking on the board.

Pre-Assessment Plan (if any): Pre-assessments help you to determine what students already know and bring to the lesson content.

- Whole Class Discussion

Input: (SCRIPTED) *Detailed planning: Write plans to a level of depth that would allow another teacher to use the plan to deliver the instruction. Script the learning target(s), transitions and key questions as well as timings.)*

1. Bring out the bags of Cheez-Its and worksheets. Shift the board to show the following instructions:
 - a. Do not eat the Cheez-Its yet.
 - b. Wash hands OR sanitize
 - c. Find the area of each shape on your worksheet.
 - d. Clearly label the area.
 - e. When you are finished, turn in your worksheet. Then you may eat the crackers or save them for later.
 - f. When you are done with the crackers, please find your learning center to begin at.
2. Discuss the directions with the class.
3. Offer up the challenge of finding out how many crackers it would take to cover their whole worksheet. Advise the students that this would be for bonus points, and to only do it after they have completed all of the other problems. Have them write the answer on their worksheet under the place for their names. (Note: Cheez-It crackers are about one square inch, the worksheets are going to be on 8.5" x 11" pieces of paper. It would take 93.5 crackers to cover their worksheets.)
4. When it comes to the hand washing portion send some students to the sink at the back of the room and others to the restrooms by the classroom. Instruct them to be quiet as they do so.
5. Pass out the crackers and worksheets while the students are washing their hands.

Guided Practice (Formative Assessment):

- Board Activities
- Learning Centers

Closure: (SCRIPTED)

- The students will work quietly finding the area of various shapes on the worksheets, using the crackers as a unit of measurement.
- When the students are finished they will turn in their worksheet, and can begin at their corresponding learning center.

Independent Practice/Summative Assessment: (How will students extend or apply their learning OR demonstrate mastery? If demonstrating mastery, include criteria for evaluation (checklist, rubric, sample, etc).)

- Worksheet

- Learning Centers

Accommodations & differentiation for learners: (For all practice lesson assume that you have at least one student in each category: attention/focus issue, language processing issue, sensory issues)

- Attention/Focus Issue: Student will be asked to help hand out materials and be asked probing questions to stay engaged.
- Language Processing Issue: Definitions written on the board, visual aids provided, trace perimeter with finger and find area of desk, crackers as a manipulative to further ingrain the idea of perimeter and area in the students' minds
- Sensory Issue: Noise in the classroom will be kept minimal during the learning centers

Multiple Intelligences Addressed: Address at least ONE of these intelligences: verbal linguistic, musical/rhythmic, visual/spatial, intrapersonal, logical/mathematical, interpersonal, bodily/kinesthetic, naturalistic