

## Lesson Plan

**Lesson: Finding perimeter, volume, and area**

**Length: 40 min**

**Age or Grade Level Intended: 8<sup>th</sup> grade**

### **Academic Standard(s):**

8 5.4 Use formula for finding the perimeter and area of basic two-dimensional shapes and the surface area and volume of basic three-dimensional shapes, including rectangles, parallelograms, trapezoids, triangles, circles, prisms, cylinders, spheres, cones, and pyramids. (Core Standards)

### **Performance Objective(s):**

When the students are given twenty problems that involve finding the perimeter, area, surface area and volume, they will correctly solve sixteen out of the twenty problems.

### **Assessment:**

The students will be assigned twenty homework problems. Depending on the problem, the students must solve for the perimeter, area, surface area or volume. When solving for the perimeter, area, surface area and volume, the teacher will evaluate the students on not only whether or not the answers are correct, but also on the work shown.

### **Advance Preparation by Teacher:**

- Review lesson plan and make sure it applies to entire classroom
- Type and print off enough student copies of the "Formulas" handout
- Type and print off a teacher copy of the "Formulas" handout
- Clean chalkboard or white board
- Fresh chalk or dry erase markers

### **Procedure:**

#### **Introduction/Motivation:**

First, ask the students, "When your time as a student comes to an end, will you still need to use math and if so, can you give an example to support this claim?" (Bloom: Application). After each student has had a chance to respond, explain to them that math will still be used in the workplace, at home, at the store, etc. Introduce the section, "Finding The Volumes of Prisms and Cylinders" and describe how having a good understanding of volume will be beneficial in life after graduation. Say to the students, "In order to have a good understanding of volume, a student must first understand its basic elements." Explain to the students the different parts of each equation and the differences of the equations and what they are different.

**Step-by-Step Plan: Remember to add the identification with Gardner's intelligences. (i.e. Gardner: Musical/Rhythmic)**

1. Say to the students, "In life, you definitely need to know how to find perimeter, area, surface area, and volumes. Even though they may not always be written down on paper, they will be a part of the thinking process when you are solving a problem." Tell the students that you are a construction laborer and your foreman wants you to figure out how much square feet of concrete will be needed to fill in two areas. Point out to them that the foreman is just asking you to find area of the building base. Write the dimension on the board and explain to the students that this represents the given problem. Tell them that you want to have them fill out the equation and solve it. (Gardner: Logical/Mathematical, Visual-Spatial and Interpersonal)
2. Ask for a student to volunteer and be the scientist. Inform the students that the scientist is filling a beaker with two chemicals, and the chemicals cannot be over spilled. Tell them to find the volume of the beaker and record their findings. (Gardner: Logical/Mathematical, Visual-Spatial and Bodily-Kinesthetic)
3. Again, ask for a student to volunteer and be the farmer. Explain to the students that the farmer wants to plant some corn on his/her 12 acre farm. Also, tell them that the width of the field is 4 acres, and its length is 8 acres. Ask them to find the perimeter of the corn field. (Gardner: Logical/Mathematical, Visual-Spatial, Interpersonal and Bodily-Kinesthetic)
5. Ask the students if they have any questions about finding the area, volume, or perimeter. If they have questions, answer them. Otherwise, have the students get their textbooks out and assign them problems. Let the students work on this assignment for the rest of the class period. Walk around the room and answer questions the students may have. (Gardner: Logical/Mathematical and Interpersonal)

**Closure:**

With about five minutes left of class, say to the students, "You should now understand how to find and use the equations for perimeters, volumes and area. From class examples and the homework problems, you have worked with finding all of these"

**Adaptations/Enrichment:**

**Student with Learning disability in reading comprehension**

Give instructions in a clear tone and go over the assignment thoroughly. Allow them to have an aid in class if needed.

**Student with ADHD**

Give the student breaks throughout the class period and make sure you spread them out. Request the student to take a break, but do **not** demand the student to take a break.

**Student with Gifts and Talents in Creativity**

Have the student create a ten problem worksheet that underlines the concept of finding volumes and area and perimeter. This worksheet could then be used as a review assignment at the end of the chapter.

**Self-Reflection:**

Do the students understand the equations and concepts that were taught?  
 If given a quiz right now, could the students correctly identify a similarity between the perimeter, volume and area and also a difference?  
 Did I keep the students engaged throughout the entire lesson?  
 Did the students participate in classroom discussions?

**Write out the questions that you will use to evaluate yourself.**

**Manchester College**  
**Lesson plans- EDUC 230**

Name: \_Brandon  
 Hiatt\_\_\_\_\_

Teacher: Dr. Korrine Gust

Date : \_\_\_\_\_

Title of Work: \_\_\_Geometry\_\_\_

	Criteria				Points
	1	2	3	4	
<b>MC Lesson Plan Format with explicitly stated Academic Standards.</b> <b>C1-</b> Plans informative, developmentally appropriate lessons and/or units <a href="#">INTASC 2, 3, 4, 7</a>	Lesson does not follow MC format or state academic standards.	Lesson does not follow MC format but does state academic standards.	Lesson plan follows most of the MC format and explicitly states academic standards.	Lesson plan follows MC format correctly and explicitly states academic standards.	<u>  4  </u>
<b>Lesson Plan Objectives</b> <b>C1-</b> Plans informative, developmentally appropriate lessons and/or units <a href="#">INTASC 2, 3, 4, 7</a>	Objectives are not included.	Objectives are included, but are not correctly written or do not relate to the stated academic standard(s).	Objectives are included, relate to stated academic standard(s), but are not written correctly.	Objectives are well written, and correlate well to stated academic standard(s).	<u>  3  </u>
<b>Assessment</b> <b>A1-</b> Develops appropriate tools to assess learning <a href="#">INTASC 4, 8</a>	No assessment is planned.	Planned assessment does not match learning objectives.	Planned assessment matches learning objectives, but is not a part of the procedures for the lesson.	Planned assessment matches learning objectives and is embedded in the procedures for the lesson.	4
<b>Procedures are thoroughly written, including Gardner's MI and Bloom's Taxonomy questions.</b> <b>C6-</b> Uses effective questioning strategies <a href="#">INTASC 4, 5, 7</a>	Procedures are unclear and do not include Gardner or Bloom references.	Procedures are mostly clear and attempts to include Gardner and Bloom references.	Procedures are clear and references to Gardner and Bloom are attempted.	Procedures can be easily replicated by others including Bloom's questions and the use of Gardner's MI.	<u>  3  </u>
<b>Adaptations/Modifications and Enrichment</b>	Lesson does not include reasonable	Lesson includes one reasonable	Lesson includes more than one	Lesson thoroughly	2 <u>    </u>

<b>Opportunities</b> <b>E1-</b> Differentiates learning opportunities that respond to individual learning styles and learning challenges <a href="#">INTASC 2, 3, 4, 5</a>	adaptations, modifications and/or enrichment opportunity.	adaptation and/or modification and an enrichment opportunity.	reasonable adaptation and/or modifications and an enrichment opportunity.	details reasonable adaptations, modifications, and enrichment opportunities that are exemplary.	
<b>Grammar and Spelling</b> <b>R5-</b> Models appropriate written communication skills <a href="#">INTASC 6</a>	5 or more errors in grammar and/or spelling are present.	3-4 errors in grammar and/or spelling are present.	1-2 errors in grammar and/or spelling are present.	No errors in grammar and/or spelling are present.	__4__
				<b>Total----</b>	<b>&gt;20/24</b> __

**Teacher Comments:**