**Lesson Plan Template**
**Date: 1/31/2020___**

**Grade: 3rd**

**Subject: Math**

**Materials: Foam squares, cotton balls, yarn, popsicle sticks, worksheet activity, PowerPoint for visual aide**

**Technology Needed: Active Board**

**Instructional Strategies:**

- ☐ Direct instruction
- ☐ Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☐ Lecture
- ☐ Other (list)
- ☐ Peer teaching/collaboration/ cooperative learning
- ☐ Visuals/Graphic organizers
- ☐ PBL
- ☐ Discussion/Debate
- ☐ Modeling

**Guided Practices and Concrete Application:**

- ☐ Large group activity
- ☐ Independent activity
- ☐ Pairing/collaboration
- ☐ Simulations/Scenarios
- ☐ Other (list)

Explain:

- ☐ Hands-on
- ☐ Technology integration
- ☐ Imitation/Repeat/Mimic

**Standard**

MAT-03.MD.08 - - Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths. Find an unknown side length. Exhibit rectangles with the same perimeter and different area or with the same area and different perimeters

**Objective**

By the end of the lesson, students will be able to use real world materials to demonstrate their understanding of area and perimeter.

By the end of the lesson, students will be able to create two shapes that have the same area and different perimeter or same perimeter and different area.

By the end of the lesson, students will be able to find an unknown side length by using a pattern of side lengths.

**Bloom's Taxonomy Cognitive Level: Demonstrate, create, apply**

**Universal Design for Learning**

**Below Proficiency:**

Students who are below proficiency will have the time to work through and clarify their understanding of area and perimeter throughout this lesson. To specifically accommodate students, during independent time, students can work at the back table with a teacher sitting next to them. The teacher will not tell students how to do the questions step by step but will be there to clarify any questions as well as guide them to critically think and problem solve. Also, the hands-on aspects of this lesson may help students to connect to the concepts on a different level.

**Above Proficiency:**

Throughout this lesson, students who are above proficiency will be challenged to think about the concepts of area and perimeter in a different way. They may not be able to rely on their knowledge of the formulas and procedures and will need to critically think throughout.

**Modalities/Learning Preferences:**

- **Visual:** Visual learners will be supported in this lesson when they can visually see the examples given as well as visually map out their thinking when building different rectangles. They will be able to complete this task when they use the foam blocks to build the rectangles.
- **Auditory:** Auditory learners will be supported when they hear the explanation of area and perimeter again. Also, when the whole class has a discussion of specific examples students think of, auditory learners will have the opportunity to connect to their learning in a new way.
- **Kinesthetic:** This lesson has three main transition opportunities where kinesthetic learners will be able to get up move around and focus back on their learning. Also, if a student would need, they could stand during group work or at the back of the whole group.
- **Tactile :** Tactile learners will be supported in this lesson because of the hands on setup. These students should really enjoy and benefit from the engage and the explore sections of this lesson.

**Classroom Management- (grouping(s), movement/transitions, etc.)**

Throughout this lesson, students will be working in their table groups, at the board, and finally working independently. Before each transition, the expectations of students will be clearly stated multiple times.

Group work- during the engage section, students will use a voice level one to discuss how they will best use the materials given. Students

**Behavior Expectations- (procedures/expectations specific to the lesson, rules and expectations, etc.)**

Throughout this lesson, students will have the opportunity to independently think and connect to the content, discuss with their peers, and listen to short bits of information from the teacher. The expectation will be that students are engaged and excited to learn throughout. If students have a question, the hope will be that they feel comfortable to ask. Specifically, during work time, students will know

**Lesson Plan Template**
**Date: 1/31/2020___**

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| will also use the materials to show their academic understanding and not as toys.<br><br>Large group- during the explain, students will come as a large group to the front of the classroom. During large group, students will show active listening by sitting quietly, eyes on the board, and hands to themselves. Students will have the opportunity to demonstrate their understanding during large group as well.<br><br>Independent work time- voice level will be 0 unless discussing with a teacher. Students will work towards the completion of the activity and ask questions throughout to clarify. | that they can raise their hand to ask for assistance as well as talk quietly to a neighbor about the topic at hand. Throughout this lesson, voice levels should be at a one or zero depending on the given situation. Overall, the goal of this lesson is for students to lead with their questions and understandings and so I hope that they actively engage and analyze the information given. |

| Minutes | Procedures |
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| 5 | **Set-up/Prep before lesson:** Before the student get to class, I will need to gather the materials. Each student will need the same length of string, same number of cotton balls, popsicle sticks, and square foam tiles. I will also need to take time to create an exit ticket worksheet as well as any visuals needed for the lesson. |
| 15 | **Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)**<br>Students, I know you have been discussing area and perimeter in math class recently, and so today we are going to review what you have already learned while also exploring area and perimeter a little bit more. In front of you, you should have four materials and then a foam rectangle. For the next ten minutes I want you to use what you remember about area and perimeter to investigate with these materials. I do not expect you to find the exact area and perimeter, instead, each of you should try to use the materials to demonstrate what area or perimeter means. Please try to think outside of the box and think of multiple examples! If you are ready, give me a thumbs up, if you are confused give me a thumbs down. (I will answer any questions students have, and then let them explore).<br><br>As students are working, I will walk around to see how they are using the materials to demonstrate their understanding of area and perimeter. I will continue to answer and questions or push students further in their understanding by connecting to what I see them completing.<br><br>After about 8 minutes have passed, I will get the students attention and then give the next direction. Students, I would like you to pick your favorite material you used and tell me how and why you chose it to represent either area or perimeter. Write your reason on a sticky note and come stick that on the board under the category it falls. Here are the directions again.<br>1. Pick your favorite material.<br>2. Tell me why and how you used it.<br>3. Stick your sticky note on the board under with area or perimeter.<br>4. Find you seat. |
| 10 | **Explain: (teacher-led)**<br>Once all the students have completed the beginning task, we will discuss some of the responses on the sticky notes. This discussion will lead us into reviewing area and perimeter.<br><br>(To transition, I will take one of the student's sticky notes and use their explanation of why they chose the object they did to show perimeter. Ex. Student A chose to use the string to represent perimeter because it could go all around the shape) To find perimeter, you will measure all the sides, and then add them up. I have a question, if I have a rectangle, can all the sides be different lengths? (wait for student response) No because with rectangles, sides opposite to each other must be equal or the same. (I will now show some examples of solving perimeter my goal will be to have student leaders solving the problem on the board or by answering questions guided by me). I will also display the formula, P= S+S+S+S on the board for students to see as we work through the examples. Some examples will also include finding the missing length of a side as well as noticing that two rectangles that look different can have the same perimeter. All examples used for this lesson can be found at the end of this document.<br><br>Students, how are we all feeling about solving perimeter? If you feel like you can solve for perimeter independently, give me a thumbs up. If you feel like you kind of understand but still need more practice, give a thumbs side. Finally, if you would like some more help, and for me to re explain give me a thumbs down. Once students respond, I will make a note of students who still need assistance. I will aid during independent work time.<br><br>Alright, now let's talk about area. When we are solving for area, do we still need to know the sides of the shape? (wait for response) Yes, we do! To solve for area, we multiply the length times the width or if we are using a grid, we would count the squares inside of the shape. (I would then show the students examples again. As we work through the examples, I would slowly release the amount of help I am giving the students to allow them to work together to solve.)<br><br>Great job solving those examples and working together class! Now it is time for you to practice the skills we learned independently! |

**Lesson Plan Template**
**Date: 1/31/2020___**

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| 20 | **Elaborate: (concreate practice/application with relevant learning task -connections from content to real-life experiences)**<br>(pass out the formative assessment)<br><br>For the first half of this activity, I want you to use the foam squares we used at the beginning of the lesson to build four different rectangles. The first two rectangles should have the same perimeter but different area, and then the second to rectangles should have the same area but different perimeters. Once you have built the rectangles, you can either trace them on the activity, or you can free draw the rectangle. Just be sure to mark each square you used. (show an example) For the last question, I want you to find the missing side length of the rectangle shown. Once you are done you can hand your paper in. Please work independently on this assignment, but if you have questions, raise your hand, and I will be around to help. (As students are working, I will give them a 10-minute, 5 minutes, and 1 minute reminder of the time they have left to work. |
| **1** | **Closure (wrap up and transition to next activity):**<br>Once the time has elapsed, I will call the students attention back to me. Great job today students! You guys did an awesome job exploring area and perimeter throughout the lesson. We will now move on to… |

| **Formative Assessment: (linked to objective, during learning)** | **Summative Assessment (linked back to standard, END of learning)** |
|---|---|
| • **Progress monitoring throughout lesson (document of student learning, data collection)**<br><br>At the beginning of the lesson, I will collect data by analyzing what objects students decide to use to represent area and perimeter. This activity is meant to assess students' prior learning and understanding.<br><br>During the explain section, I will be analyzing student responses to questions and examples. No formal data will be recorded, but I will continue to monitor how students are learning informally. If a specific detail of importance should arise, I can make note of it.<br><br>At the end of the lesson, we can use the worksheet example given at the end of this lesson to assess student understanding. The worksheet can be used as an "exit ticket" to analyze student learning throughout. | At the end of the unit of area and perimeter, students will take a summative assessment create by the school curriculum team. Each class must take these assessments at the end of the unit to effectively track students progress throughout their learning in a universal way. Most summative assessments are short and are graded on a rubric assigning student grades 0.5-4 |

**Teacher Reflection (What went well? What did the students learn? How do you know? What changes would you make?):**

**Lesson Plan Template**
**Date: 1/31/2020___**

Name:_____

Directions:

- Questions 1 and 2- Use your square tiles to create two shapes with the same perimeter but different area. Trace the shape
- Questions 3 and 4- Use your square tiles to create two shapes with the same area but different perimeter. Trace the shape
- Question 5- Find the missing side length

1.

A=_____

P=_____

2.

A=_____

P=_____

3.

A=_____

P=_____

4.

A=_____

P=_____

5. John is building a fence for his dog to play in. He knows that he wants the side widths to be 2 feet and he knows one side length will be 5 feet. How long should the second length be? What is the area and perimeter of this fence?

_____ in.

1 in.

1 in.

A=_____

5 in.

P=_____

**Lesson Plan Template**
**Date: 1/31/2020___**

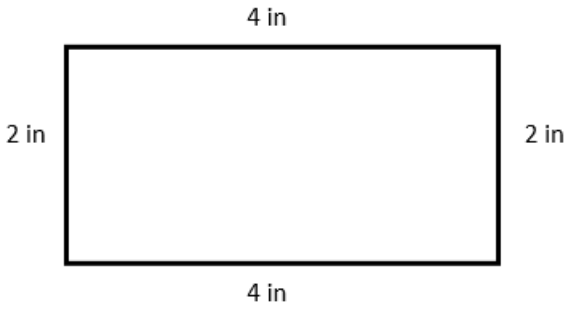
# Area and Perimeter Review

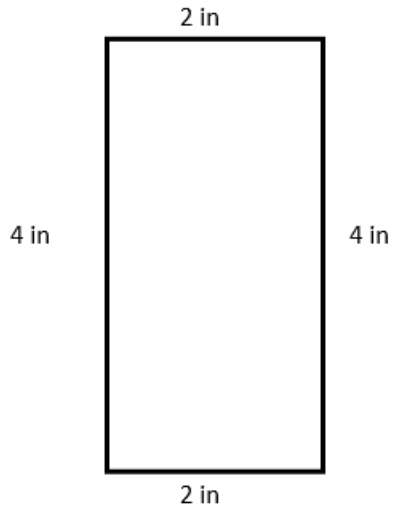
| Area | Perimeter |
| --- | --- |
| | |

**Lesson Plan Template**
**Date: 1/31/2020___**

# Perimeter Examples

- P= S+S+S+S

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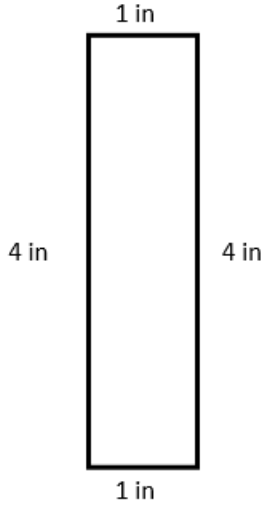


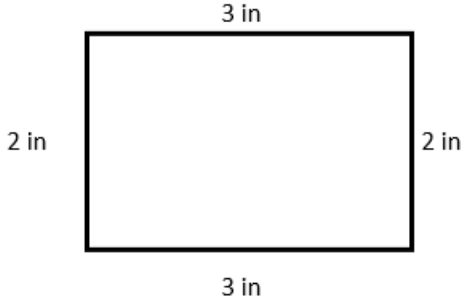

**Lesson Plan Template**
**Date: 1/31/2020___**

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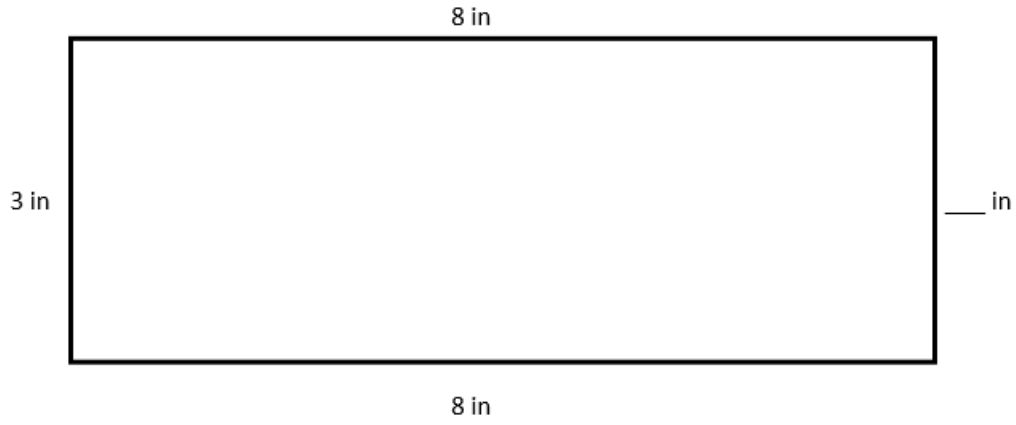


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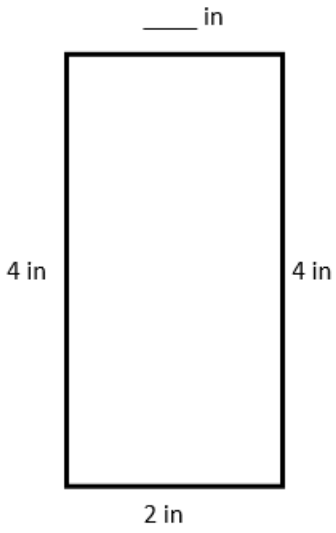
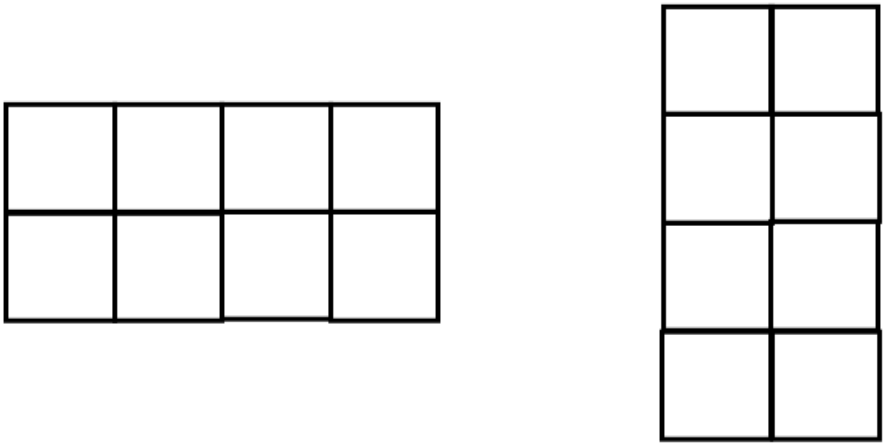


**Lesson Plan Template**
**Date: 1/31/2020___**

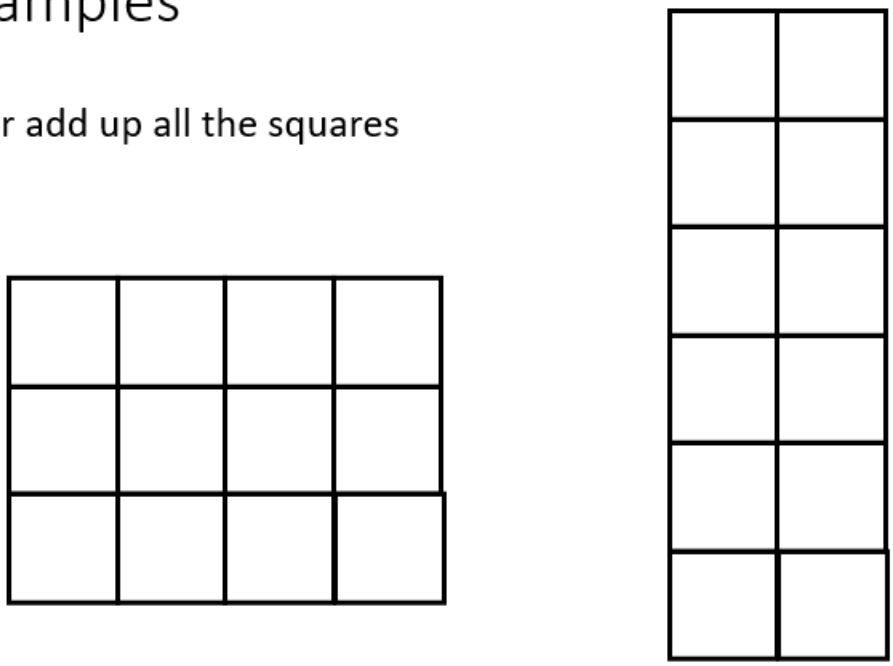
# Area Examples

- A= L x W or add up all the squares inside the shape



# Area Examples

- A= L x W or add up all the squares



# Your Turn!

- Build four rectangles with foam squares
  - Two rectangles need to have the same perimeter but different area
  - Two rectangles need to have the same area but different perimeter
- Trace the rectangles into the boxes
- Label the sides
- Write the area and perimeter of each rectangle
- Solve for the missing side length for question 5
- Turn in your paper