# 3rd Grade Unit 3 Area & Perimeter of Polygons
# Real World Experience (Teacher's Version)

https://learner.org/courses/learningmath/measurement/session9/part_a/index.html (an interactive task for teachers to explore area/perimeter)

In these tasks, you will manipulate squares to model altering the perimeter of tables in order to maximize seating potential. You will then determine the size table cloth you need for the table of your choice. Finally, you will write about your experience and learning.

*Student responses to the "Guess Who's Coming to Dinner?" task should reflect a variety of solutions. Student work should demonstrate that they paid close attention to the details of the problem. Work should be clearly labeled to show guests' names. Written explanation should be easily understood. Ask students to share their solutions along with highlights of their discussion that occurred while finding their solutions. (Some students may recognize that as the perimeter gets smaller, the rectangle gets closer and closer to a square.)*

**Task 1:** Read *Spaghetti and Meatballs for All* by Marilyn Burns. In the story, relatives come to dinner and begin rearranging tables which results in losing seating places. After reading the book, use colored square tiles to model some of the events in the book. Discuss changes in area and/or perimeter caused by the moves. *Make sure that students are experiencing the difference between area and perimeter and how they change and relate to each other.*

**Task 2: "**Guess Who is Coming for Dinner**"** Pretend that four people live at your house (your mom, dad, sister, and you). Aunt Sue, Uncle John, and their six children (Jamal, Kevin, Carl, Annie, Stephanie, and Maxine) are coming for dinner. Uncle Kenny is coming too. He is bringing his wife, (Aunt Jenny) and four kids (Earl, Charles, Jasmine, and Justine).

Mom has six square folding tables she can use but you don't have to use all of them. (Each folding table seats four people, one on each side.) You can put two or more of the folding tables together to form a rectangle if you like.

To make your feast successful, decide on a seating arrangement that is best for your family of guests. When finished, draw a picture of the table arrangement and label each place to show who will be sitting there. Mom has the following rules: there should be no empty chairs; there must be at least one grown-up at each table.

**Task 3:** Looking at your design from task 2, you need to determine what size table cloth your mom needs to order to cover the table you designed. Each side of each square folding table is 3 feet long. The table cloth should be a perfect fit for the table perimeter.

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**Task 4:** Write a paragraph about your table designing experience.

Be sure to include:

- A description of what happened to the perimeter of the seating area as tables were pushed together
- What happened to the area of the seating area as tables were pushed together
- Which arrangement you chose
- An explanation as to why the arrangement you chose is the best possible arrangement
- Which math practices you used to develop your knowledge about area and/or perimeter while completing these tasks

| | |
|---|---|
| Meeting | • Student explains his/her thinking so that others can understand<br>• Student explains what happened to the perimeter of the seating area as tables were pushed together<br>• Student explains what happened to the area of the seating area as tables were pushed together<br>• Student explains which arrangement they think is the best for the situation<br>• Student explains why they think this arrangement is the best<br>• Student explains the math practices used throughout the activity |
| Developing | Student meets 4 of the 6 require criteria |
| Beginning | Student meets less than 4 of the required criteria<br>Student should rework task 5 after more instruction |
| Notes | |

**Student Example**

Guess Who's Coming to Dinner?

3rd Grade

Unit 4

total
kids
adults

Clothlyn

need 54
ngs of table
cloath

Mikayla' Ethan
Unkle Kenny Aunt
Jenny Ty Jacob
Jamizyah Trey

3+3+3+3+3+3=18
3x6=18
A=18
P=18


3+3+3+3+3+3=18
3x6=18
A=18
P=18


3+3+3+3+3+3=18
3x6=
A=18
P=18


On number one the area and perimeter were the same. All of them were 54 total.

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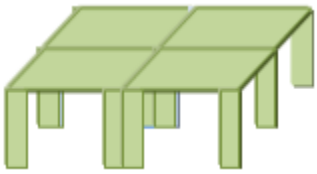

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**Task 3:** Looking at your design from task 2, you need to determine what size table cloth your mom needs to order to cover the table you designed. Each side of each square folding table is 3 feet long. The table cloth should be a perfect fit for the table perimeter. Show your calculations below.

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