

Discovering Area and Perimeter

Glenn Lawler

Franconian International School

Lesson Description

Mathematics: Using the book *'Spaghetti and Meatballs for All'* as a basis to have the students exploring the concepts of area and perimeter by arranging eight dining tables to seat various numbers of guests.

Academic Objectives

To explore the concepts of area and perimeter

Holistic Objectives

Cognitive/Thinking:

- *Correlation*: Students will be able to identify a relationship between two or more things related to each other.
- *Causation*: Students will be able to discover or create a relationship between interdependent sequential events showing how one event influences or determines a second event.
- *Problem Solving*: Students will be able to use the appropriate cognitive skills to identify and resolve situations where no known solution is readily obvious.

Engage

Read the book *Spaghetti and Meatballs for All!* It is a story about Mr. and Mrs. Comfort, who are busily preparing a feast and arranging 8 tables and 32 chairs so that all the guests will have a seat. As the guests arrive, however, and families ask to sit together, the Comforts have to rearrange the tables so they can accommodate everyone. After they've tried six different combinations, they go back to their original setup and the guests finally get their fill of spaghetti and meatballs.

Explore

In the book Mrs. Comfort doesn't use mathematical terms to describe her seating plans, but she is really talking about area and perimeter. Students use small square tiles or other manipulatives to construct different ways to arrange eight tables to seat the guests.

Explain

Go through the book again with the class and use the words 'area' and 'perimeter' to talk about the size of each arrangement and the number of people it seats.

Evaluate

- Students draw or sketch of each new table arrangement.
- Students figure out how many people could be seated at each arrangement.
- Students use the tiles or drawings to investigate various problems: Suppose there were going to be just 12 people at the family reunion. What different table arrangements are possible? Which arrangement would use the fewest tables? Which arrangement would use the most tables?

Extend

For additional challenges, students try the same problem for 16, 24, 36, or any other number of people

Similar Lesson Plans

- <http://www.edpsycinteractive.org/brilstar/integrative/math/Spaghetti-and-Meatballs-for-All-m.doc>
- <http://www.edpsycinteractive.org/brilstar/integrative/math/Spaghetti-and-Meatballs-for-All-m2.doc>

Resources

- Book: *Spaghetti and Meatballs for All!* by Marilyn Burns
- Square tiles

Links

http://www.region2library.com/DATA/2010SI/adaptedlit/Spaghetti%20and%20Meatballs/Resources/Finding_Perimeter.ppt