

Pasta Triangles – A Triangle Inequality Activity

*Second Place Winner 2006 NASCO Middle School Math Lesson Plan Contest
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Instructional Objective:

Through the use of pasta sticks, students will discover the triangle inequality principle.

Materials (per student):

- Three pieces of pasta
- Triangle Recording Chart (see last page)
- Ruler/measuring tape
- Pencil

Steps:

1. Discuss the following story and the questions in the story.

Terri Triangle wants to build a new triangular shaped garden in her backyard. To fit in with the rest of her landscape, she wants the measurements of the garden to be 12 feet by 8 feet by 3 feet. She hires Gary Gardener to build the garden and to plant her favorite flowers. Gary, knowing that the customer is always right, suggests that Terri change the measurements of the garden for aesthetic purposes. Terri sticks by her plan. Why is Gary concerned about the garden? Can the garden be built as Terri would like? What flowers should Terri plant?

Question to Ponder:

Can any three lines/segments fit together to form a triangle? Let's investigate!

Part One

- Take one piece of pasta.
- Break the pasta into three pieces.
- Measure each piece to the nearest centimeter.
- Record the measurements in the chart.
- Now, try to fit the pieces together to create a triangle.
- If a triangle can be formed, state "yes" in the chart. If not, state "no".

Part Two

- Take another piece of pasta.
- Break the pasta into three pieces so that you think they will fit together to form a triangle. Think before you break!
- Measure each piece to the nearest centimeter.
- Record the measurements.
- Make a triangle.
- Ask: Why did you cut the pasta into three lengths? How did you know that they would fit into a triangle? What would you tell a friend to do if s/he wanted to cut three lengths to make a triangle?

Part Three

- Take the last piece of pasta.
- Break it into three pieces so that you know they will not fit together to form a triangle.
- Measure each piece and record the measurements.
- Make sure that the pieces will not fit into a triangle.

Part Four

- Ask: Can any three measured lengths/sticks fit together to form a triangle? Can you think of a rule that would work for triangle building?

Name: _____

Period: _____

Triangle Recording Chart

	Pasta Piece Length	Pasta Piece Length	Pasta Piece Length	Triangle (Yes / No?)
Part 1				
Part 2				
Part 3				

Part 2 Questions:

1. Why did you cut the pasta into three lengths?
2. How did you know that they would form a triangle?
3. What would you tell a friend to do if s/he wanted to cut three lengths to make a triangle?

Part 4 Questions:

1. Can any three measured lengths/sticks fit together to form a triangle?
2. Can you think of a rule that would work for triangle building?