

Spaghetti Triangles

TN Curriculum Standards: Checks for Understanding: 3108.4.11 Use the triangle inequality theorems (e.g., Exterior Angle Inequality Theorem, Hinge Theorem, SSS Inequality Theorem, Triangle Inequality Theorem) to solve problems.

The triangle inequality theorem states that any side of a triangle is always shorter than the sum of the other two sides.

Materials Needed:

- Raw spaghetti noodles
- Rulers
- Hand-out (next page)

General Description of Activity:

Students will “discover” the theorem concerning the lengths of the sides of a triangle by forming triangles from spaghetti noodles. Students will be given several sets of 3 possible lengths for a triangle. They will measure and cut (break) the noodles to the given lengths and use those lengths to see if a triangle can be formed. Finally, the students will write a rule for deciding if the given lengths of three segments can form a triangle.

Spaghetti Triangles

Follow these directions:

1. **Carefully** measure and cut (break) lengths of spaghetti noodles according to the following amounts:
1 inch; 2 inches; 3 inches; 4 inches; 5 inches; 6 inches; 7 inches; 8 inches
2. Try to make a triangle with the given lengths in the chart. Write yes or no in the appropriate column.
3. Generalize your findings by writing a “rule” on how to tell if three given lengths can form a triangle.
4. Answer the questions at the bottom of the page.

			Triangle? Yes or No
4	5	6	
1	3	5	
3	4	5	
3	5	6	
2	7	8	
1	4	5	
2	3	4	
5	6	7	
2	5	8	

My rule for determining if three given lengths can form the sides of a triangle:

Use your rule to determine if the following lengths could form a triangle. Write yes or no.

(a) 34, 40, 83 _____

(b) 5, 33, 51 _____

(c) 19, 31, 50 _____

(d) 13, 18, 29 _____

