Heather McNeill

Cooperative Group Activity

Topic: The Triangle Sum Conjecture
Grade level: 10th
Subject: Geometry
Estimated time for completion: 15 minutes
Materials: 6 triangles using three different colors, protractor, recording sheets, pencils.

In this activity students will work together to find the measure angles of different triangles and discuss characteristics they notice. There are three positions, a measurer, a verifier and a recorder. Each person will hold each role for the duration of two triangles.

Instruct the class that they will be looking at different angle measures of triangles.

There are three positions that each of you will hold. There is a measurer, a verifier and a recorder. You will switch off on these positions. If our three person group is composed of Mike, Sara and Stephen, then Mike will be the measurer first and he will measure the three angles on one of the blue triangles he will tell Sara what he measures for each angle and Sara will record his angle measures. Then Mike will pass on the first blue triangle to Stephen and Stephen will measure the angles himself to check that he gets the same measures as Mike did. Stephen will tell Sara what he measures and she will record the measures. Mike will then measure the second blue triangle and they will all repeat their roles. Then Stephen will take the orange triangles and measure those angles while Sara verifies what Stephen found and Mike records all the angle measures. Then it's Sara's turn to be the measurer, Mike the verifier and Stephen the recorder as Sara measures the purple triangles.

So in your column of the recording table it should show that you measured four different triangles.

Now on the half sheet of paper you are going to fill in the table and make a group conjecture.

Inform the class that both papers will be collected.

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Group Recording Sheet

Group Member Names	_____			_____			_____		
Triangle 1's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c
Triangle 2's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c
Triangle 3's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c
Triangle 4's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c
Triangle 5's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c
Triangle 6's Angle Measures	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c	___° m∠a	___° m∠b	___° m∠c

Fill in the table below and make a conjecture from what you notice.

	Type of Triangle	Sum of the Angles
Triangle 1		
Triangle 2		
Triangle 3		
Triangle 4		
Triangle 5		
Triangle 6		

Conjecture: