

Featuring Moscow String Quartet: *Strings*

Study Guide: Math

Objective: To understand quadrilaterals are 4 sided figures and calculate total degrees of the angles in a quadrilateral.

Standard: Grade 3 FL Mathematics Standards: Compose, decompose, and transform polygons to make other polygons, including concave and convex polygons with three, four, five, six, eight, or ten sides. MA.3.G.3.2.

Time: 40 minutes

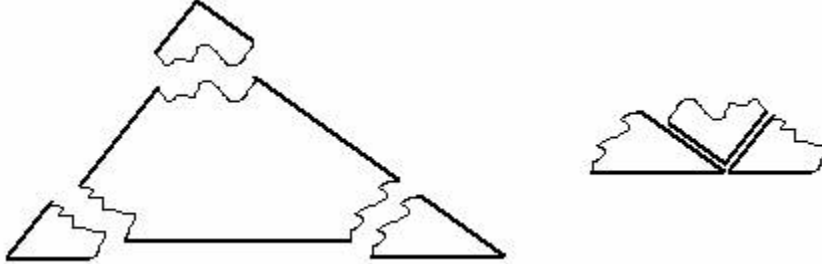
Materials: worksheet, pencil, white piece of paper, ruler, scissors, overhead projector or whiteboard

Activity:

1. Teacher explains the group playing in the concert for the Artist Series is called The Moscow String Quartet. Students give their ideas of what Quartet means.
2. Teacher plays an excerpt from the Moscow program to give the students an idea of the music that will be played in the concert.
3. Teacher explains the prefix qua- means 4, like quadruplets means 4 babies, quadrilateral means 4 sides. Students give other examples of words with qua- in them. Teacher will explain that this prefix is derived from Latin and is the basis for anything with 4 of something. Other prefixes in numbers include di- (2), tri- (3), penta- (5), hexa- (6), hept- (7), oct- (8) non- (9), deca- (10). These prefixes are derived from both Latin and Greek.
4. Teacher will review (or teach, depending on the grade being taught) the definition of a quadrilateral: 4 sided figure with 4 angles. Some quadrilaterals include: square, rectangle, trapezoid, parallelogram, and a rhombus. These figures can be drawn and labeled on a white board or overhead projector.
5. Teacher will go over the characteristics of each figure, emphasizing the square and rectangle: a square has all equal sides and 4 90° angles. A square has 2 sets of equal sides and 4 90° angles. Ask students how many degrees make up a quadrilateral. They should be able to calculate 90×4 and come up with 360° .
6. Teacher will show students that a square and rectangle can be divided in half diagonally to make 2 triangles. It should be noted that 2 triangles make any quadrilateral.
7. Students will be given a white piece of paper, and they will measure out a square that is 8" on each side. They should cut this out. Then, students

- will draw a line diagonally on the square to make 2 triangles. They will then cut them apart and understand the two triangles are congruent (equal).
8. Have students label each angle of the triangle (A, B, C) and tear the angles off. Then, line the angles together to make a straight line (using a the straight edge if a piece of paper as a guide.) Student should note these come together to make 180° , or a straight line. If 2 triangles make a square, then a square has 360° . (See diagram below.)
 9. Students will complete worksheet on quadrilaterals.

Tear off the angles and show that they can be put together to make a straight line or 180° .



Assessment: Teacher will assess students by observation, class participation, and worksheet.

Resources: <http://www.nzmaths.co.nz/geometry/shape/SimpleAngles.aspx>
http://www.mathlearningcenter.org/media/Bridges_Gr4_OnlineSupplement/B4SUP-C2_Geo2-3D_0708.pdf
<http://www.emusic.com/album/Carlos-Kleiber-Alexander-Borodin-Symphony-No-2-Conducted-by-Ca-MP3-Download/11081493.html>
(excerpt from the concert)