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**Scale Picture Recreation**

**Writer:** Jessica Mullen  
**Grade Level:** 6-8  
**Related Big Picture Concept:** Collaboration, Order, Part/Whole  
**Subject Areas:** Math, Art  
**Essential Question:** How is scale used in art?  
**Abstract:** Students will apply scale through the recreation of a work of art.   
**Duration:** Approximately 90 minutes for the discussion and calculation of scale, as well as directions. Creation of the art work map will take another 180 minutes spread out over 4 days.

**Focus Works of Art:**   


***Mosaic***

2nd Century

Marble and glass

98 1/2 x 99 1/2 x 2 1/2 in. (250.2 x 252.7 x 6.4 cm)

<http://artnc.org/node/434>

**North Carolina Standards Correlations**

Visual Art:

* 7.V.3.2 Compare media in order to choose the best option to create art.
* 7.CX.2.2 Select skills and information needed from other disciplines to solve artistic problems.

Math:

* 7.RP.2. Recognize and represent proportional relationships between quantities
* 7.G.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
* 7.G.2. Draw geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

**Student Learning Objectives**

* Students will compute an appropriate scale from an original work of art.
* Students will apply their scale in the recreation of a work of art with accuracy.
* Students will choose an appropriate art medium with which to complete their own personal art work.
* Students will accurately construct triangles in order to complete their portion of the art work.

**Activities**

1. Display the Roman *Mosaic* on a projector and have the class discuss what they notice. Encourage students to make connections to mathematical connections such as different geometric shapes, line structure, and symmetry. Zoom in to small parts of *Mosaic* to discuss finer details and how they play out in the whole work.
2. Discuss the original dimensions of the work of art (98 ½ x 99 ½ x 2 ½ in.) and the size of the picture being projected. Calculate the scale factor of the model (picture 5” x 5”) vs. the actual work of art. Make sure students recognize which measurement (2 ½ in) will not be usable and why (real work is 3D, picture is 2D).
3. Explain that together, the class will be recreating the work to a more manageable size and only two-dimensional (suggested size: 40” x 40”, divides up into 25 pieces.) The print-out grid will be cut into 1.5” x 1.5” squares. The class will work together to determine an appropriate scale that everyone will use for the project. Suggested scale above yields 1” on student art work = 1/8” from student piece of the actual Mosaic.
4. As a class, have students agree upon what materials the class will use to create their Mosaic model. Have an assortment of materials available to help students make a group decision. Options may include: construction paper, colored pencils and paper, paint and paper, colored foil.
5. Model how to create one piece. Show how to measure a piece of the *Mosaic* and draw it onto a 8” x 8” piece of paper. Discuss best approaches to collaboration with students and how precise measurements are critical to the finished product.

**Assessments**

* Participation, notes, and development of the scale may be used to evaluate the students’ understanding of scale.
* Precision of the geometric shapes will be used to evaluate the students use of measurement tools in creation of art.
* The relationship of the students’ pieces to one another will be used to evaluate how the students used measurement tools and collaborated with classmates for accuracy.

**Resources**

Vocabulary:

* scale
* scale factor
* inches (or centimeters)
* feet (or meters)

Materials:

* 8’’ x 8’’ white scrapbook paper (or the back of ugly paper)
* Two color print outs of *Mosaic* with one divided up into 1.5’’ squares and the other one with a grid as a guide for putting together the class recreation
* variety of art supplies
* rulers, and pencils

Lesson Resources:  
<http://artnc.org/node/434>