

# Mural Math

## *Sixth Grade + Math and Visual Arts*

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### CORE SUBJECT AREA

Math

### ART FORM + ELEMENTS

Visual Arts

Drawing, painting, media arts, line, shapes, form, texture, color, value, balance, contrast, proportion

### MSCCR STANDARDS

6.RP.A.3 - Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number lines, or equations.

### MSCCR CREATIVE ARTS STANDARDS

VA:Pr5.1.6a - Individually or collaboratively, develop a visual plan for displaying works of art, analyzing exhibit space, the needs of the viewer, and the layout of the exhibit.

VA:Cr2.3.6a - Design or redesign objects, places, or systems that meet the identified needs of diverse users.

### DURATION

2 class periods

### OBJECTIVES

Interpret multiplication as scaling (resizing). Apply scaling to solve real world problems. Participate in an oral critique of a mural using appropriate technology. Collaborate with my peers to create a mural using the elements of art and principles of design and making use of proportional math.

### MATERIALS NEEDED

Dragon image handout grid, graph, or isometric paper art paper, paint brushes, water cups, school wall (or other backdrop)

### VOCABULARY

Scale, Multiply, Ratio, Rate, Reason, equivalent, table, equation, double number line, diagram, mural, color, texture, warm, cool, neutral, value, color, scheme, texture, focal point, contrast

### RECOMMENDED RESOURCES

KET Scale City <http://www.ket.org/scalecity>

### LESSON SEQUENCE

Begin by showing the video from The World of Mural Painting ([http://www.ket.org/scalecity/vplayer.html?le=world\\_of\\_mural\\_painting&hiLo=hi](http://www.ket.org/scalecity/vplayer.html?le=world_of_mural_painting&hiLo=hi)). Discuss the purpose of the murals shown in the video. They are narrative art, or art that tells a story.

Explain that murals, like all works of art, make use of the elements of art and principles of design. Describe to the students what warm, cool, and neutral colors are. Have them describe objects around the room that fall into these categories.

Distribute the "Critiquing a Work of Art" handout. Pick one of the murals from the video and lead students through the process of describing, analyzing, interpreting, and evaluating the mural together. Remind students that people have different responses to art, and it is important to have discussions in a supportive and constructive way.

Create a class mural. You may use an existing painting or quilt pattern to scale up, or you may use the dragon image included with this lesson.

If you use the dragon image, you can engage your class in making collaborative artistic decisions. Define the parameters in terms of your available resources and time. For example: Is there a school wall you could paint or

do you need to work on paper? Do you have the time and space for painting or would markers, crayons, and/or colored pencils be a better choice?

Discuss and explain the parameters to your students. Then project the image and ask:

- If we make this into a mural, should we have just the dragon head or add a neck and upper body?
- Should we add a background?
- What should be the focal point—the eye, the fang, or the entire head?
- How could we use lines, highlights, or contrast to draw attention to the focal point?
- What kind of texture should the dragon have? -How will we indicate the texture?
- What should be the color scheme?
- What elements of art should be contrasted (color, value, texture or all three)?

After discussing these questions, you could allow students to work in teams to come up with a proposed design for the class mural. Run off copies of the dragon image and let them experiment with markers, colored pencils, and/or crayons. Have the class view the proposed designs and come to consensus on how to proceed.

Have the students scale the dragon up to be a mural size. Be sure to include fractions in the scaling (e.g., increase the image by  $2\frac{1}{4}$  times rather than just two times.)

## EXTENDED LEARNING ACTIVITIES

Have the students reduce the size of the image instead of increasing it.

## SOURCES

<https://mpb.pbslearningmedia.org/resource/5visualart/dragon-scales>