SCALE CITY
KET

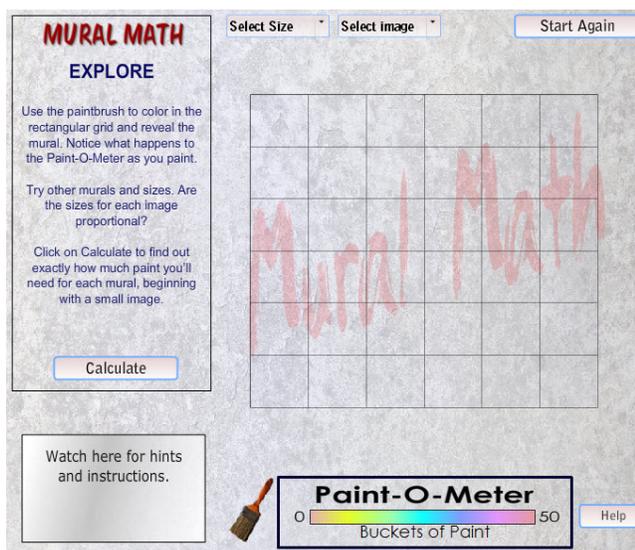## World of Mural Painting: Mural Math

Welcome to "Mural Math." This interactive opens to an image of a small rectangular grid. Use the cursor to move the paintbrush over the grid and paint the hidden mural. Experiment by clicking and changing the options under the "Small" and "Jazz" boxes to reveal different sizes and themes.

Click on "Calculate" to discover the math behind mural painting.

Check the "Ruler" box on the top right to measure the grid. To rotate the ruler, move your cursor over the curved arrow and drag in the direction you would like it to rotate.

"Check Answers" will reveal whether your answers are correct. There is a small margin of error, since you might come up with slightly different answers. The exact answer will pop up in place of your approximate answer.

The "Next" box will appear after you have answered the questions correctly. Click on the "Next" box to continue with the interactive.

MURAL MATH
EXPLORE

Use the paintbrush to color in the rectangular grid and reveal the mural. Notice what happens to the Paint-O-Meter as you paint.

Try other murals and sizes. Are the sizes for each image proportional?

Click on Calculate to find out exactly how much paint you'll need for each mural, beginning with a small image.

| Select Size | Select image | Start Again |

Calculate

Watch here for hints and instructions.

Paint-O-Meter
0 — 50
Buckets of Paint
Help

Text of Help Boxes for "Mural Math"

The help boxes include interactive directions and mathematical hints to assist with calculations.

Explore Page

Help 1: Explore the different sizes and murals as much as you like. When you go to Calculate, you'll start with one of the small murals and work your way through the larger sizes. If you have a web cam, choose "You" to use your own image or someone else's to create a real-time, full-motion mural!

Calculate Page

Help 2: Start by using the paintbrush to color in the small painting. Then measure its dimensions, calculate its area, and observe how many buckets of paint you used. When "Check Answers" reveals that all your answers are correct, a "Next" button will appear and you'll move on to a medium-sized version of the painting.

Help 3: You must answer question 3 before you can "Get Paint," fill the Paint-O-Meter with the number of buckets you predicted, and paint the grid. Notice that the Paint-O-Meter only holds 50 buckets, so you can't predict a number larger than 50.

If you have trouble answering question 3, "Compare" will help you visualize what happened to the small grid when its height and width increased proportionally. Use "Erase" to clear the grid before you try again.

Each time you change the answer to question 3, you must re-click on Get Paint to refill the "Paint-O-Meter" and repaint the mural. When all the answers are correct and the mural is painted, clicking on "Check Answers" will allow you to move to the next page.

Mural Math Questions

Use the number of buckets in Part One of each series of questions to fill in the first blank in question 3 in Part Two and question 3 in Part Three.

Fiddle

Part One:

1. Use the paintbrush to color in the grid and reveal the painting.

2. Use the ruler to measure the mural's dimensions (height x width). (Hint: Is this a square grid?)

   _____ m   x   _____ m

3. What is the area of the painting? _____ m^2

4. Look at the Paint-o-Meter. How much paint did you use? _____ buckets

Part Two:

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____ m^2

3. It took _____ buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Part Three

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____ m^2

3. It took _____ buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Jazz

Part One:

1. Use the paintbrush to color in the grid and reveal the painting.

2. Use the ruler to measure the mural's dimensions (height x width). (Hint: Is this a square grid?)

   _____ m   x   _____ m

3. What is the area of the painting? _____ m^2

4. Look at the Paint-o-Meter. How much paint did you use? _____ buckets

Jazz continued

Part Two:

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____ m²

3. It took _____buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Part Three:

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____ m²

3. It took _____ buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Market

Part One:

1. Use the paintbrush to color in the grid and reveal the painting.

2. Use the ruler to measure the mural's dimensions (height x width). (Hint: Is this a square grid?)

    _____ m x _____ m

3. What is the area of the painting? _____m²

4. Look at the Paint-o-Meter. How much paint did you use? _____ buckets

Part Two:

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____m²

3. It took _____buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Part Three:

1. What are the dimensions of the new grid (height x width)? _____m x _____m

2. What is the area of the grid? _____m²

3. It took _____buckets to paint the 2x2 grid. How many buckets are needed for

    this grid? _____ buckets

You

Part One:

1. Use the paintbrush to color in the grid and reveal the painting.

2. Use the ruler to measure the mural's dimensions (height x width). (Hint: Is this a square grid?)

_____ m   x _____ m

3. What is the area of the painting? _____ m^2

4. Look at the Paint-o-Meter. How much paint did you use? _____ buckets

Part Two:

1. What are the dimensions of the new grid (height x width)? _____ m x _____ m

2. What is the area of the grid? _____ m^2

3. It took _____ buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets

Part Three:

1. What are the dimensions of the new grid (height x width)? _____ m x _____ m

2. What is the area of the grid? _____ m^2

3. It took _____ buckets to paint the 2x2 grid. How many buckets are needed for this grid? _____ buckets