Mathematics and Visual Art

The Math Behind Matting Sixth Grade

Objectives

- Students will understand the importance of art presentation
- Students will learn to use math to mat their own works
- Students will mat their works
- Teachers will create a classroom exhibition of class work

Introduction

Discuss with students the importance of art display. Show students an unframed work (preferable on paper) and a matted and framed work. Ask them which they would prefer to display in their home, office or classroom.

Learning Activity

1. Students should measure their artwork. The mat must cover at least 1/8" of the artwork on all sides, in order to prevent the edges from peeking through or actually falling through the mat opening. More of the edges of the artwork may be covered if desired, but the very minimum is 1/8".

Consequently, if an artwork measures $8" \times 10"$, the opening will be 7-3/4" \times 9-3/4", or perhaps 7-1/2" \times 9- 1/2". Always check the exact image size and where the opening will be positioned on the artwork.



2. This measurement is the size of the rectangle that you will cut out of the center of your mat board or construction paper. To find out how wide the borders will be, take the measurements of the mat board, minus the size of the artwork, and divide that number by two.



Lou Jene Mountford Carter, Mostly Flowers 1993

Materials

- Images of Self- Portraits (See Images from the Museum)
- A framed and matted artwork as an example
- Ruler
- 12x18 Black construction paper or Mat Board
- Scissors or X-acto knives
- Flmers Glue

Images from the Museum

Lou Jene Mountford Carter, Mostly Flowers

Utah Core Standards

Math

6.G.1

Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques into the context of solving real-world and mathematical problems.

Visual Arts

Standard 1 Objective 3

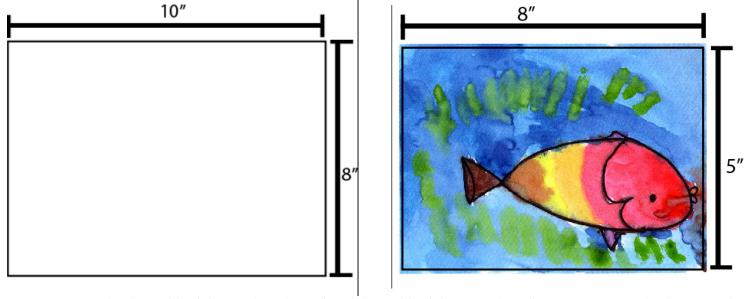
Handle art tools and materials so their inherent danger is minimized

Respect other students' art works as well as one's own.

The Math Behind Matting

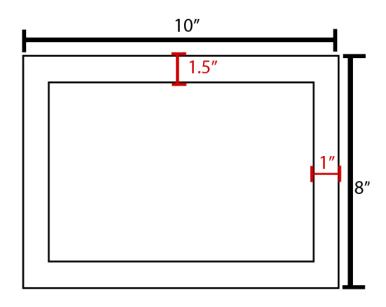
Sixth Grade

2. This measurement is the size of the rectangle that you will cut out of the center of your mat board or construction paper. To find out how wide the borders will be, take the measurements of the mat board, minus the size of the artwork, and divide that number by two.



In this example, the width of the mat board is 10", and the width of the artwork is 8", so 10- 8 = 2, divided by 2 = 1. That means that the two side margins will be 1" wide.

3. The height of the matboard is 8", and the height of the artwork is 5", so 8-5=3, divided by 2=1.5. That means the top and bottom borders will be 1.5" each. Or, if we want to make the bottom border bigger to give the matting a sense of weight, we can redistribute the numbers (i.e. 1" border on top, 2" border on bottom) so long as the top and bottom borders add up to 3.

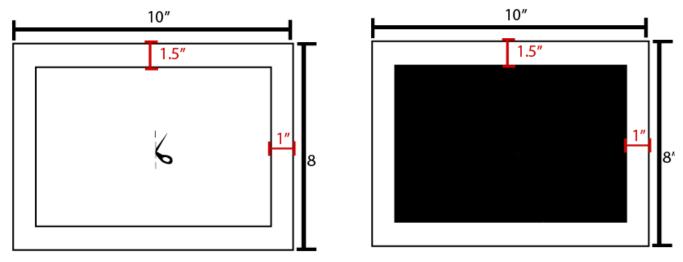


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Matting with Construction Paper

There are several ways to cut the matting. For starters, if you are using plain construction paper, the kids may be able to cut out the border themselves.

After they have drawn the centered square (as shown above), have them begin by bending the paper (without making creases) and cutting a mark in the middle of the square to be removed.



From there, they can cut to the edges of the traced rectangle and cut out the opening.

Cutting Mat Board

For anything thicker (like cardboard, mat board, or foam core), you will need either a mat cutter or an X-acto blade. Box cutters will do a good job so long as the blade is sharp (middle-dull box cutters will destroy the edges). A board mounted trimming tool is also helpful for thicker materials, however these may not be readily available, nor have a function that stops the blade short of cutting across the entire board.

After you have drawn the square, you will need a yardstick (metal is preferable) and a self healing mat (or some other kind of surface protection). Place the mat board on the surface, and lay the ruler along one of the edges so that it is perfectly parallel but not covering the line itself. Push downward to keep the ruler in place as you cut.

Next, steady the blade on a corner across from you and press down on the blade. The blade may not go through the entire board on the first run, so be careful to keep the line straight as you make several passes. Pull the blade toward you in one motion, using the ruler's edge to help keep it straight. Be careful to not cut further than the lines drawn on the mat board.

Continue this process until all the edges are cut.

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Floating Frame Hang

- 1. If you would like to do a floating mount, you will begin by trimming all borders off the artwork, if you have not already done so.
- 2. Next, measure the dimensions of the artwork. You do not need to measure in the 1/2" like before.
- 3. Take the measurement and minus at least an inch from each side (top, right, left and bottom). This new measurement will be the dimensions of the mat board or foam core.
- 4. Center the board on the artwork, and lightly trace around it. Remove the board and apply a thin layer of elmers glue or mod podge. Let it dry for approximately 60 seconds so it becomes tacky. Carefully place the board within the traced lines on the back of the artwork. Press firmly and allow to dry.

Once all the pieces have the board attached to them, mount them on a big piece of black foam core. This provides a very sophisticated look.

Purchasing Pre-Cut Mats

Instead of cutting mats, there is the option of bulk purchasing pre-cut mats. If you make all the art projects slightly larger than the opening in the pre-cut mat, and then use adhesive putty to adhere the art to the mat, you can reuse the mats and not have to worry about cutting. Of course, this eliminates the possibility of varying sizes from project to project.