

Teaching Measurement through Technology



Jessica Nickerson

Teaching art in a large elementary school is wonderful. There is a lot to prepare for and many different levels to teach, but these challenges have their advantages. The more you teach a lesson, the more you adjust it to make it better. It becomes easier to foresee any difficulties that students might have and then address those difficulties. This is how my measurement PowerPoint came about.

Creating Lines

Any art teacher knows (or finds out pretty quickly) that the skill of using a ruler is a lost art (or maybe never discovered). Students might know how to measure a line from point A to point B in math, but as far as creating their own lines by measuring with a ruler, most of them are lost before they start. I figured this out

pretty quickly as I tried to teach a class of second graders a paper quilt square lesson for the very first time.

I was standing in the front of the class trying to juggle my own ruler, paper, and pencil in order to

let students see what I was doing. Students became easily confused and lost. After that

fiasco, I figured that the best way for me to show them visually how to measure a straight line, and to be able to circle the classroom to offer help, would be for me to create a how-to-measure PowerPoint presentation that students could follow as I guided them step-by-step.

A Technological Lesson

My PowerPoint shows a ruler and the paper the students were using. The ruler moves from slide to slide to show the students where their next lines should be placed. With

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each new slide there are new sets of lines. Using this presentation, along with verbal directions and circulating around the classroom, measuring for the quilt squares became a success. Each student was able to measure off and prepare a square that became a part of a paper quilt. I invite you to try a similar approach with other lessons that involve measurement. It certainly worked for me! ☺

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NATIONAL STANDARDS

Students identify connections between the visual arts and other disciplines in the curriculum.

Students use visual structures and functions of art to communicate ideas.

Both the lesson plan and PowerPoint for the paper quilt are available here.

PATTERNED

Quilt Squares

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Objectives

Students will:

- explore uses and history of quilts and quilt art by Faith Ringgold.
- demonstrate recognition of pattern, repetition and symmetry through making a quilt square.
- create an accurate grid, measuring with a ruler.
- demonstrate good artistry when using scissors and glue.

TEKS, Art

- **Perception.** The student develops and organizes ideas from the environment.
- **Creative Expression.** The student expresses ideas through original artworks, using a variety of media with appropriate skills.
- **Historical/Cultural Heritage.** The student demonstrates an understanding of art history and culture as records of human achievement.
- **Response/Evaluation.** The student makes informed judgments about personal artworks and the artworks of others.

TEKS, Language Arts

- **Reading/comprehension.** The student uses a variety of strategies to comprehend selections read aloud.
- **13 (B)** compare experiences of characters across cultures

TEKS, Math

- **(2.6)** Patterns, relationships, and algebraic thinking. The student uses patterns to describe relationships and make predictions.
- **2.9 (A)** Identify concrete models that approximate standard units of length and use them to measure length.

Vocabulary

Pattern—the repetition of elements in ways that have meaning

Symmetry—the correspondence in size, form, and arrangement of parts on opposite sides of a line

Repetition—to do over and over again

Resources and Materials

- *Explorations in Art* by Marilyn G. Stewart and Eldon Katter; grade four
- “Making a Quilt Square” PowerPoint
- *Cassie’s Word Quilt* by Faith Ringgold
- reproductions of Faith Ringgold quilts
- Google Images search: “quilt square”
- 9 x 9" (23 x 23 cm) black paper
- 3 x 3" (8 x 8 cm) colored squares, up to nine per student
- pencils, rulers, scissors, glue, construction paper, and crayons

Motivation

Read *Cassie’s Word Quilt* and discuss the painted quilts that she designs. Tell students they will make their own quilt square that will be combined with those of their classmates to make a larger quilt to hang in their classrooms.

Procedures

Distribute the black paper, rulers, and pencils. Lead students through the steps of measuring out 3" squares and marking every three inches along the edges of their paper. (Use the Quilt Square PowerPoint to guide students through this process).

Once the lines have been drawn, tell students to line up the ruler

with the marks they made to create lines that cross from one side to the other. Students should have a 3" grid with nine squares.

Pass out the colored squares and show students how they can fill their grid with a colored paper in every square. Tell them to take the squares from one corner diagonally to the other and point out that the pattern looks like a checkerboard. Encourage students to continue to experiment with patterns using squares.

Next, show students how to cut a square in half diagonally to make two triangles. Encourage them to experiment with their patterns. Remind them to make sure that their pattern is symmetrical from top to bottom or from side to side. If it is symmetrical in one of those two ways, students may glue down the pieces of their quilt square. The center square can be decorated by drawing a small self-portrait or writing the student’s name with crayons. Students can also draw dotted lines to represent quilt stitches around the edges of their quilt pieces.

Once students have completed their squares, glue the squares side-by-side to make a larger quilt. Display in the classroom.

Assessment

Did students:

- explore uses and history of quilts and quilt art by Faith Ringgold?
- demonstrate recognition of pattern, repetition, and symmetry through making a quilt square?
- create an accurate grid, measuring with a ruler?
- demonstrate skilled artistry when using scissors and glue? ☺

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