

Quilt the Curriculum



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Program Outline and Overview

Student Population: Quilt the Curriculum was used with three first grade classes in a computer lab setting, using math as its curricula area. The project can easily be modified and used with any grade level, elementary through high school, in any setting in which a computer, printer, and scanner are available.

Introduction to the Project: The students had been working on a variety of arithmetic software for several weeks and were losing interest. Their classroom teachers wanted them to continue to focus on math in the computer lab as an enhancement to their classroom curricula. The days were getting gray and cold and so were the students. Creating a math quilt became the perfect blend of curricula, computers, and a warm, cozy attitude.

Major Goals: The overall goal of the project was to keep the students involved in using the standards-based arithmetic software, while teaching them to use the computer and peripheral equipment as creative tools, all under the guise of creating a curriculum-based wall-hanging quilt.

The goals of future quilt projects will change according to the curricula area chosen and the age and interests of the students. Sixth grade students, for example, may create a history quilt depicting their knowledge of Greece or ancient Egypt. A literature class might create a Poetry Quilt that features the students' original work. A science class might create a quilt showing the life cycle of a butterfly.



Goals: The specific computer goals for the math quilt project:

Computer Skills:

1. Open a software program
2. Follow computer-generated instructions
3. Take a screen shot, and locate and retrieve it
4. Create and retrieve a file
5. Print
6. Add text
7. Change font attributes (size, font, color, style)
8. Scan
9. Save

Math Skills: These are the skills depicted on one of the quilts as a result of screen choices made by the students.

M1a: Adds whole numbers

M1b: Demonstrates an understanding of the base-10 place value system.

M1d: Describes quantities by using real-world models

M1f: Describes and compares whole numbers

M2b: Represents two-dimensional views of simple shapes

M6d: Computes money

M6f: Uses the "+" sign in number sentences

M7b: Shows mathematical ideas in a variety of ways



Timeline: The timeline for each group and grade level will depend upon the curriculum area chosen and the level of computer experience and expertise of the students. As I was working with first graders who visited the computer lab twice a week, the project took three months to complete. When setting up a timeline, be sure to allow time for sewing the quilt together. I reduced this time by sewing the sections together, as they were printed on fabric, rather than waiting until all of the sections were complete.

Required Material: Don't let the number of required items scare you. Numbers 11 through 15 are things you probably have lying around your house.

1. iMac or PowerMac computer
2. Scanner
3. Color printer
4. Graphics creating and editing software such as KidPix Studio Deluxe or Adobe Photoshop
5. Curricula-based software: Franklin Learns Math, Bubble Band Math, Zoo Zillions, Carnival Countdown, Millie's Math House, The Graph Club
6. Computer printable fabric: Each piece of printed fabric measures 8 ½" X 11" and each becomes one section of the quilt. I used nine pieces of printable fabric per quilt. Each finished quilt measured 35" X 28". Older students or larger numbers of students will probably want to create larger quilts. I suggest thinking in groups of three, that is 9 sections, 12 sections, etc. or in groups of four such as 8 section, 12 sections, 16 sections, etc. It helps to have more than one student work on each section.
7. Decorative fabric: This will be used to sew the sections of printed fabric together and give each section a frame. The yardage will depend on the desired finished size of the quilt.



8. Border fabric: This is used to create a border around the perimeter of the quilt. I used the same fabric that I used for the decorative fabric frames around each section. The yardage will depend on the size of the finished quilt.
9. Backing fabric: This is the fabric you will use on the back of the quilt. You can use more of the decorative fabric or a contrasting fabric. The yardage will depend on the size of the finished quilt.
10. Thin batting: the same size as the finished quilt.
11. Needles and pins
12. Thread
- 13 Iron and ironing surface
- 14 Sharp scissors (I prefer to use a rotary cutter and a self-healing mat. These can be found at any fabric store.)
- 15 A ruler or straight edge (A clear plastic quilting ruler is best but not necessary.)

Lesson Plans: Lesson plans for this project will depend on the age of the students, the computer experience and expertise of the students, and the subject matter chosen for the project. My first graders' computer experience consisted of choosing a program and following its directions. Their experience with the printer consisted of hitting the print key and waiting for the results. They had never seen nor used a scanner. They had no experience working as a group to plan a project and knew nothing about sewing. I therefore had to start from scratch.

The plans as listed here are geared to first graders. They will, of course, be modified for older, more experienced groups of students.



Lesson 1: Introduction of the project:

Goal: To pique student interest in using existing computer software and equipment to create an art project, and to give an overview of the project including a quick background of quilts in American history.

Materials: A sample quilt, if possible, or quilting magazines showing a variety of colorful quilts.

Exhibit a small quilt and/or show several quilts from quilting magazines. Explain that quilts have a long history in America and in the world. During colonial times most women spent long hours spinning, weaving, and sewing to keep their families in clothes. Some of the wealthier women-- those who could afford cloth--spent time sewing quilts. It wasn't until the production of affordable textiles in the mid 19th century that more women found time to quilt. Before World War II, most quilts were made for warmth, and the fabric came from the families' old clothes; in rural areas, feed-sack cloth was added. After the war, people began creating decorative quilts to use on beds, as throws on sofas, or as art in wall hangings. The fabric was usually bought in fabric stores.

Oral history of the pre-Civil War period in America suggests that secret codes were sewn into quilts and used to help guide slaves to safety during their escape from the south along the Underground Railroad. For example, the Bear Claw pattern depicted on these pages supposedly told the slaves to follow the bear tracks over the mountains. Bears know the best way to get across the mountain, so following their tracks would lead the slaves safely through the passage. Quilt historians researching this era, however, have found no evidence that such a practice actually occurred.

Discuss the goal of the specific quilt the class will create. If the purpose of the quilt is to simply show examples of the student's work, a loose plan deciding how many sections to use will be enough. If the quilt is to be a



story quilt, the story will have to be planned out and divided into sections. Each section will become a section of the quilt. If, for example, the quilt is to explain the life cycle of the apple tree, it will need eight sections for the showing of the parts of the cycle, plus one section for a listing of the standards achieved using this project. A Poetry Quilt will need a section for each student's or group of student's poems, plus a standards section.

The plan should be drawn out and displayed in the room. Be sure to emphasize that this is a preliminary plan that will change as the project progresses. The plan I used has been included in this packet.

If time allows, the students can immediately begin using the curriculum software and begin to think about which computer screens they might want to use in their quilt.

If you are working with very young children, you will find some students are reluctant or even upset by the idea of choosing a computer screen as their quilt section entry. Since the basic goal is to have the students focus on the curricula material and not the computer itself, allow these students to draw their entry on paper and scan it into the computer later.

Lesson 2 Choosing the Computer Screen

Goal: To have the students use curricula-chosen software as much as possible within the computer session(s).

Materials: The original sample quilt and/or magazines, a computer, curricula software.

Begin this lesson with a review of the quilting project. Some students may want to examine the quilt closely. Go over the plan and refine it according to the student's ideas. Have the students begin to use the software. They go through the software screen after screen, completing



the work and then deciding whether or not that particular screen is a good entry for the quilt.

I wanted to have the students complete as many screen as possible, thereby continuing to develop their math skills as much as possible, so I rejected screen after screen, saying this has too many math examples, or has too little math on it, or isn't colorful, etc. I found the students willing and eager to continue their search with just a little encouragement.

Lesson 3: Screen Shots, Saving and Retrieving

Goal: To teach the students how to use a **screen shot** to **save** their chosen computer screen, for future use, and then **retrieve** it.

Materials: iMac computer

Curricula based software

KidPix Studio Deluxe software or Adobe Photoshop

Although I am listing this as lesson 3, you may go through many lessons, or class sessions, before you are ready to move on to this phase of the project.

1. Choose the screen you want to use in the quilt. Take a **Screen Shot** of it by pressing the shift key, and the apple key, and the number 4 key all at the same time. **Shift/Apple/4** A cross (like a plus sign) will appear on the screen. Press the mouse button, hold, drag the cross to one corner of the screen, and then drag down and across the screen. This will define the area you want to use. Let the mouse button go. You may hear a sound like a camera shutter snapping. Close out of the program.
2. Go into the **Hard Drive** and find the screen you have saved. It will be listed as Picture 1 (or 2 if it's the second screen shot and so on).



3. Open **KidPix**. Click the **top center icon**.
4. Go to the **File Menu**, click on **Import A Graphic**, select **Picture 1** (or which ever number it is), and then **Open**.
5. Go to the **File Menu** and select **Print**. Choose the **Medium size**.
6. Select **Manual** and choose an orientation. Remember that all sections of the quilt must use the same orientation. Click **OK**.
7. If text is to be added: click on the **typewriter icon**. Open a text box. Choose a font, its size, and its color. Add text and position it as you please.
8. Save the work for future use. Be sure to note where you save the screen so that it can be retrieved easily.

If you are using **Photoshop**:

1. Open **Photoshop**.
2. Go to **File**, and then **Open**.
3. Find the picture in the **Hard Drive**, then **Open**.
4. To **resize** the picture, go to the **File Menu** and select **Print Options**. A height of 5 inches and a width of 6 inches or so is a good rule of thumb if text is to be added above or below the screen. **Click OK**.
5. Use the Photoshop tools to add text, colors etc.
6. Save. Notice where it is saved so that it can be retrieved later.



Lesson 4: Retrieve, Print, Add, and Scan

Goal: Customizing the work

Materials: iMac computer
Computer printable fabric
Color printer and paper
Scanner

Once a screen is saved, it is available for customizing. Work in small groups.

1. Open **KidPix Studio Deluxe**.
2. Go to the **File Menu** and select **Open A Picture**. Find the saved picture and open it.
3. Text and graphics can be added using the KidPix toolbox. Once the screen is acceptable, print it out on paper. Using dark-colored crayons or pens add signatures, class numbers etc. Place the completed work on the scanner bed and scan into the computer. The specific process you use will depend on the scanner and scanning software you choose. Save the scanned work. Print it out on computer-printable fabric. Follow the directions on the fabric package. Allow the printed fabric to dry for a few minutes. Save it in a folder.

If you are using **Adobe Photoshop**, open the program:

1. **Open Adobe Photoshop.**
2. Open the **File Menu** and select **Open**.
3. Find the **saved work** and select **Open**.
4. Use the Photoshop toolbox to edit the work.
5. Go to the **File Menu** and select **Print Option**. Check to be sure the size is correct.
6. Select **Print**.



Some students will be nervous about using a computer, but will want to be part of the quilting project. I allowed these students to choose an arithmetic concept, draw their idea using crayons on paper, and then scan their work into the computer. Computer-generated text was added, and the final work was printed on fabric.

Lesson 5: Assembling the Quilt

Although this is listed as a lesson, it is actually an ongoing activity. You have a choice. You can either wait until all of the screens are printed on fabric before beginning the sewing process or begin the sewing process as soon as the first two sections are available.

Goal: Assembling the quilt

Materials: The printed fabric sections

Decorative, border, and backing fabric

Make it easy on yourself and use the same fabric for all of this. For a nine-section quilt, you will need about two yards. This will give you some extra fabric to use when fixing mistakes. For larger quilts, larger amounts of fabric will be needed. Measure as you go to buy the correct amount. Then again, I always buy three yards and have plenty left over for another project.

Young children will not be able to sew the quilt together. You might ask parents to help, or even older students. Junior high and high school students will be able to do the sewing.

Assemble the Materials

This may seem like a lot of complicated work, actually it's quite simple. Decorative fabric strips are sewn between each computer-printed fabric section, and then border fabric strips are sewn around the perimeter of the



quilt. Batting is added, and then backing fabric is added. Finally, the quilting (decorative stitching that holds the three layers together) is added.

You will need:

1. The nine or more printed fabric sections.
2. Decorative fabric to be used between each section to join the sections together. See the diagram. These pieces of fabric will be called Joining Fabric (JF). For a 9-section quilt, you will need six pieces measuring 1 ½" X 9" and 2 pieces measuring 1 ½" X the length of the side of the quilt, ideally 34 ½".
3. Fabric used as a border around the quilt: You will need two pieces 2" inches X the length of the side of the quilt, ideally 34 ½". And two pieces 2" X the width of the quilt including the side borders, ideally 30".
4. Fabric used on the back of the quilt: Ideally you will need one piece 30" X 38".
5. Thin quilting batting the size of the backing fabric, ideally 30" x38".
6. Needles, pins, a pencil, thread to match the fabric.
7. An iron and ironing surface
8. Very sharp scissors or rotary cutter and self-healing mat.
9. A ruler or straight edge. A clear plastic quilting ruler is best but not necessary.

Sewing It Together

Pull the backing paper off one section. Be careful to pull the paper SLOWLY. This is poor-quality fabric. The edges will fray, changing the size of the fabric. Iron it flat if necessary.

Turn section one over to the back side. Draw a margin line all around the edges of the fabric ¼" from the edges of the fabric. This will become the sewing line. Try to make the sewing line straight, even if it means going a bit short or a bit more than the ¼"--but not too short of the mark as the seams may split later.



Cut a piece of joining fabric (JF1) 1 ½" wide and 9" long. Trim it later. Turn this piece over and draw a ¼" margin line around the entire piece.

Place JF1 and Section 1 together, front sides together, so that the top of JF1 matches the bottom edge of Section 1. Sew along the bottom margin line. Pull JF down. The two pieces should be sewn together at the bottom edge of Section 1, with both front sides facing up. Iron the seam toward JF. Iron the seam on the front side as well on the back.

Peel the paper off section 2, and iron flat. Turn it over and draw the margin lines ¼ inch from the edges, all around the fabric.

Place Section 2 on top of JF1, front sides together, so that the top of Section 2 matches the margin line of the bottom of JF1. Sew along the margin line, open the seam, and press toward JF1. Press the top of the seam also. Trim the excess off JF1.

Cut JF2, 1-½" wide and 9" long. Turn this over and draw a ¼" margin all around the piece. Place JF2 along the bottom edge of Section 2, front sides together, with the edges matching. Sew along the bottom margin line. Open, sew, and press the seam toward JF2. Sew the top side of the seam.

Treat Section 3 the same way and sew it onto the bottom of JF2. You now have a strip containing Section 1, JF1, Section 2, JF2, and Section 3.

Follow the above instructions to create the strip containing sections 4, 5, 6, JF3 and JF4, and the strip containing sections 7, 8, 9, JF5, and JF6. Continue as above to create more strips if you are making a larger quilt.

Cut JF7 and JF8 2 inches wide, and the length of the strips. Ideally, these pieces will be 1 ½" wide by 34 ¼" long. Turn these pieces over and draw in the ¼" margin lines. Attach these pieces between the section strips. Sew along the margin lines and trim the excess.

Iron the quilt flat. Cut two border pieces 2" wide. The length of these strips should equal the length of the quilt as measured along the sides of the quilt (border 1 and border 2), ideally 34 ½". Turn these pieces over



and draw in the $\frac{1}{4}$ " margin lines. Attach to the sides of the quilt. Press the seams toward the borders. Press the top sides of the seams as well.

Cut two pieces of border (borders 3 and 4) 2 inches wide and equal to the width of the quilt including the side borders. This should be about 30 inches for a 9-section quilt. Attach these borders to the top and bottom of the quilt, and press the seams toward the borders. Iron the entire quilt flat.

Cut a piece of backing fabric to be used for the back of the quilt. Cut it about $\frac{1}{2}$ " wider than the quilt on all sides. Place the backing fabric on top of the quilt, front sides together. Pin together.

Cut a piece of batting to match the size of the backing piece. Lay this on top of the backing fabric and pin it. You should have three layers: the top of the quilt, the backing piece with front sides together, and the batting. Sew through all three layers along the margin lines. Leave about $\frac{1}{2}$ " of one section unsewn. Trim off the excess, so that there is a $\frac{1}{4}$ " margin around all four sides.

Turn the quilt inside out through the unsewn side. Try to get the corners turned as sharply as possible. Stitch up the unsewn section.

Using thread that matches the fabric, sew through all three layers all around each section of the quilt. Stitch right over the seam lines. This is called "stitching in the ditch." Or sew through all three sections of the quilt using a decorative stitching pattern. Have fun and be creative. These stitches are the "quilting" part of the quilt. These stitches hold the quilt together so that the batting doesn't shift.

That's It!

The quilt is finished. Be sure to sign your work. Display it and admire it.



Resources:

All schools receive software catalogs through either the Principal's office, the Department of Technology, or the Technology Coordinator. These are the best sources of curriculum-based software. Also check local technology stores for educational software, and regional educational software sales representatives.

Fabric stores (ask for a school discount; use a tax-exempt form):
Fabric Bonanza, Joanne's Fabrics, Wal-Mart

Magazines: There are several quilting magazines easily found in fabric stores or at larger newsstands and bookshops. Any of them are a good source of photos.

Websites to explore:

AOL House and Garden.com

Gone To Pieces: <http://www.ruthmweaver.com>

Feathered Star Productions.com

HGTV.com (Try the Simply Quilts site)

Bibliography:

Software:

Franklin Learns Math: a Sanctuary Woods product

Bubble Band Math by Edmark, an IBM product

Zoo Zillions by Edmark, an IBM product

Carnival Countdown by Edmark, and IBM product

Millie's Math House by Edmark, an IBM product

The Graph Club, a Tom Snyder product

Abode Photoshop

KidPix Studio Deluxe



Notes



