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## From 19th Century Social Reform to 21st Century School Improvement: A Community Service-Learning Quilting Project for Middle School Students

Irene S. LaRoche

Leslie Kelly

Cindy Tuttle

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**From 19th Century Social Reform to 21st  
Century School Improvement:**

**A Community Service-Learning Quilting  
Project for Middle School Students**

by

**Irene S. LaRoche, Leslie Kelly, and Cindy Tuttle**

Prepared for the

Regional Information Center  
School of Education  
University of Massachusetts Amherst

Lauren Kosky, Unit Editor  
Robert W. Maloy, Project Director

NSLC  
c/o ETR Associates  
4 Carbonero Way  
Scotts Valley, CA 95047

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on Social Studies and Social Science Education

# **From 19th Century Social Reform to 21st Century School Improvement:**

## **A Community Service Learning Quilting Project for Middle School Students**

by Irene S. LaRoche, Leslie Kelly, and Cindy Tuttle  
of Team 8B Greenfield Middle School, Greenfield, Massachusetts

*"I wish I could sew a quilt that would spread over the whole land, and the people just  
follow the stitches to freedom, as easy as taking a Sunday walk."*  
**--from Sweet Clara and the Freedom Quilt by Deborah Hopkinson**

University of Massachusetts Amherst  
School of Education  
March 2001  
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## Regional Information Center

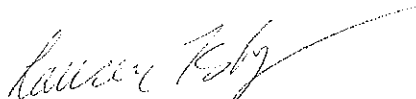
School of Education, Room 2 Furcolo Hall, 813 North Pleasant Street  
University of Massachusetts, Amherst, MA 01003-9308  
Telephone: 413-545-4727 Fax: 413-545-2879  
Email: CSLRIC@acad.umass.edu

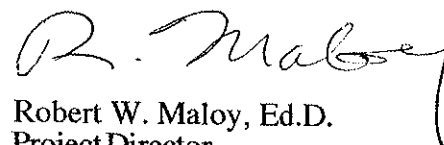
From 19th Century Social Reform to 21st Century School Improvement: A Community Service-Learning Quilting Project for Middle School Students by Irene S. LaRoche, Leslie Kelly, and Cindy Tuttle is the fourth in a series of exemplary curriculum units on social studies and service learning developed by public school teachers and compiled by the Regional Information Center at the School of Education, University of Massachusetts Amherst.

Our series of service learning/social studies units began four years ago as part of the work of the National Service Learning Clearinghouse and its affiliation with the ERIC Clearinghouse on Social Studies and Social Science Education. Our goal is showcasing many different ways to integrate service learning into history and social studies classes in elementary and secondary schools.

Irene, Leslie, and Cindy teach at the Greenfield Middle School in Greenfield, Massachusetts. They are all members of the same middle school team, and they developed the lessons together as part of their team's curriculum. In this unit, students explore the history of 19th century social reform movements using concepts and skills from the disciplines of social studies, English, and mathematics. Students not only examine the past but imagine the future by proposing ways to improve education for all students. It is the use of interdisciplinary teaching and the emphasis on social change that make this unit such a unique resource for teachers and students alike.

We hope you enjoy the unit. As always, we welcome your comments and suggestions as well as ideas for other units.

  
Lauren T. Kosky  
Unit Editor

  
Robert W. Maloy, Ed.D.  
Project Director

## **Thank you:**

We want to thank Team 8B class 2000 for their hard work and commitment to helping the community and making an impact on the future. We also want to extend our appreciation to Amy Clarke and Donna Suchanek for supporting this project

-- Irene S. LaRoche, Leslie Kelly, and Cindy Tuttle

## Unit Overview

"From 19th Century Social Reform to 21st Century School Improvement" is an interdisciplinary teaching unit built around a community service learning quilting project. It is designed for use by middle schoolteachers who want to integrate lessons from United States history (19th Century social reform), English/ Language Arts (writing of school improvement plans), and mathematics (scale drawing and measurement in quilt design). The unit includes approximately two weeks of academic work; an additional period of time is needed in school or after school if students are going to sew their quilts. As a team of Social Studies, Language Arts, and Mathematics teachers, we chose to do this quilting project for the following reasons:

- First, it gave a way to connect to our required women's history standards. Many women in the 1800's did not have a voice which reached our history texts, but the contributions which they made to reform movements such as working to end slavery, or, the temperance movement were significant. Many women were able to discuss important issues and work collectively for social reform when they came together in quilting bees. As students worked sewing their quilt squares on reform and school improvement, they imagined what it would have been like to be a woman in the 1800's and what parts of society they would try to change.
- Second, the state-wide Massachusetts Comprehensive Assessment System composition test and the recent changes made in the Greenfield school system (such as the possibility of cutting teacher positions) had increased our students' interest in understanding how schools are run. We wanted to assist them in getting their ideas about their community heard. Teaching students about activists of the past helped them to become reformers of the present.
- Last, (but not least!) the students had a chance to use their math skills in measuring, scale drawing, and even some geometry as they created their quilt squares. Math was no longer an abstract subject, but something which they could put to use in a practical and tangible way, on an activity that combined personal creativity and academic learning

Our goal was to create two quilts, one on the theme of social reform in the 1800's (to be donated to a homeless shelter) and the other on 21st century school improvement (to be donated to the newly renovated school). Students were not graded on the quality of their sewing. Rather, they were assessed on the process of research and daily participation in sewing the quilt squares. There was also a final writing assessment in the form of an essay which was graded. Additionally, the applied math was assessed. The Language Arts and Social Studies components were graded together, and the Math was graded separately to show the students that this project was important for assessment in all three subjects.

We chose to coincide this project with our state standardized tests (MCAS) so that students could have a break from the intense academic work and rigors of testing and have some fun with hands-on learning. Our students welcomed this activity and saw it as a treat. On the one half-day of school in which the students worked on the MCAS test and then went home, they expressed disappointment that they would not work that afternoon on their sewing. One student wrote a story about the quilting project describing her feelings about this special unit.

## Quilt Square Project

### Edited version

Once upon a time in the town of Fairyfield, there lived a team of 8B. On this team were three magical fairies, one that taught Language Arts, the second taught math, and the third head leader, social studies. These great fairies wanted something fun and exciting to do while their little ones took the *long test*.

Well, the social studies teacher of Fairyfield took a gander at a quilt square project! She said, "We could have the little ones sew together a quilt." When she announced her idea, the other teachers agreed and floated on down to an 8B team meeting. The team of little ones were so excited because they knew that for many years most students across the land didn't get to do anything but work after the test.

The little ones agreed and the magical trio went down to the Fairyfield Textile! When they arrived, the math teacher, Ms. Tuttlefy announced her idea of putting the strips horizontally on one yard of the cloth. "Then there would be a lot of waste," Ms. Kelfairy said. She figured out that if you put the cloth vertically that more strips would fit on one yard and not have as much waste as Ms. Tuttlefy's idea. So Ms. LaRoche, the queen fairy, agreed to the measurement. They went back to Fairyfield Middle School and handed out four strips to each student.

The students were thrilled and made a beautiful quilt in the end for the homeless fairies in Fairyfield. The other students in the land got angry because they had to work three weeks while 8B had wonderful, cheerful teachers that let them have a little fun!

The end of the quilt square.

As this project progressed, we discussed with the students the value of giving voice to their ideas of school improvement through their quilt designs. Many lively discussions were held as the students explained the ideas they were representing in their squares to each other. It was clear that there was agreement among the students that the ideas behind each of the squares were important to all of them. Even though the students worked mainly on their individual squares, the quilt really was a product of the ideas and feelings of the team as a whole. It had already been decided by the team that the social reform quilt would be donated to the local homeless shelter. We also planned to donate the school improvement quilt to the soon to be newly renovated middle school to be displayed in the lobby. By displaying the quilt in a public place, the students' ideas would be seen, but how could we assure that their messages would be heard? During class discussions of school improvement, students arrived at the question; why is our school the way it is, who is responsible for making the decisions about our schools? In answering this question for the students, we also gained an answer for our dilemma-the students needed to present their ideas to the local school committee.

We explained to the students the role of the local school committee. Many of them had never heard of the school committee and did not understand its role in the school system. For most students, their teachers and the principal appear as the sole decision makers in their school life. It was an eye-opener for them to look at a larger power structure. Just as women in the 19th century appealed to decision makers of their time in addition to sewing their political messages into quilts, our students wanted to go to the source of the school power structure by speaking with the school committee about their ideas.

We met after school with the students who had created school improvement squares and asked them to explain the ideas as conveyed in the quilt. We also had three students prepare the introduction for the school committee. We maintained a distance as the students worked, providing encouragement, but not changing their statements or ideas. Although this was not a graded assessment of what the students had learned, it was certainly an affirmation for us as teachers when we heard the completed presentation for the first time during a rehearsal at our team's end of the year awards assembly. This presentation was the true work of the students. As they spoke, it was evident that the students had met the objectives of this unit. It was also a pleasure to witness the response of those students in the audience, it was very clear that the students' sense of ownership and pride was probably unsurpassed by any other project they undertook this school year. On the following page is the introduction of the student's presentation.



## **Introduction to Presentation of Social Reform and School Improvement Quilts to Greenfield School Committee**

written by Team 8B students:  
Eliza, Danielle, and Stephanie

On April 12 of the year 2000, eighth graders took the long essay part of the MCAS tests. The topic given was school improvement. There were various responses from the students. From those responses we began to have class discussions due to the growing interest in our ideas. Then the teachers got to talking. It just so happened that our upcoming Social Studies unit was 19th century reform. Reform means changes for the better. It wasn't long before our teachers had fused together a project which incorporated both school improvement and reform. We expressed our ideas of school improvement through the quilt squares because it was appropriate for the time period we were studying.

Beyond what the results of the MCAS test told us, we found many problems. It seemed as if the decisions that were being made for our school were being primarily based upon how the students represented the state and not how the state represented our needs to create a better learning environment. The state focused too much on what we were learning and not how we learned it. It seemed as though the root of the problem was being ignored and the blame was being placed upon the shoulders of the students and teachers of our school. On this we based our ideas for our image of a better school. We then created quilt squares to convey our ideas. The ideas ranged from nap time to a more diverse study of cultures.

School improvement was quickly connected to our unit on 19th century reform movements. A definition of reform is to make a change for the better or to correct what is wrong. This is exactly what we wanted to do pertaining to our learning environment. The reform movements of the past are exactly that, in the past, and yet they greatly affect our lives today. Where would our world be without the great contributions and accomplishments donated to our society by women, African-Americans, and many other diverse cultures which had been previously denied the civil rights which we so often take for granted. We hope that our thoughts on school improvement will positively affect students of future generations. In this way, school improvement is the reform for the future.

## Unit Rationale

At the start of our unit, we introduced the students to our ideas about the connection between 19th century social reform and 21st century school improvement, we then challenged them to think over the coming weeks about their response to this question. As part of the culminating essay the students were required to respond. We teachers gave our own responses to the questions as well:

### **Why does this project focus on 19th century social reform movements and 21st century school improvement? What is the connection between them?**

*Ms. Tuttle: "Reform--study what people have done in the past. School improvement--our study of what we can do in the present. Reform: past, as school improvement: future. The world constantly changes. Think of the grains of sand along the beach. With each new tide, you have to make a new path. We need to be ready to change each year and that is how we grow."*

*Ms. Kelly: "There is a saying that those who do not know history are doomed to repeat it. Well, I want to make this only half right. It is my hope that through learning about our 'ancestors' efforts to actively reform and improve this world that we can in fact 'repeat' this type of activity on our own lives and improve our school community."*

*Ms. LaRoche: "In the 1800's, many Americans saw that there was a gap between the ideals of freedom, equality, and democracy and the reality for many living in the U.S. People started to become social activists to try to fix the problems in the U.S. and bring the country closer to a true democracy. Schools in our country support the concept of equality by providing a free, public education. In the year 2000, schools are a place of opportunity, but they are also imperfect institutions. I see a natural connection between learning about reform activists of the 1800's and becoming social activists ourselves as we work to improve our school."*

### **Why is social reform an important subject to learn?**

- Studying reform is how students learn about change in society. This unit not only revisited the past, but also had the students take a proactive view of change in the future.
- Studying reform prepares students for responsible citizenry.
- Studying reform engages the students in the curriculum. The students actually created the curriculum for the school improvement quilt.
- The MCAS Language Arts Composition for the year 2000 asked students to write about how they could improve their school. This project validated that question by taking it one step farther and having students represent their thoughts within the quilt to be publicly displayed.

### **Why is this method effective?**

- Students represented their ideas for both the social reform and school improvement squares in drawing. Students had to be able to explain orally and in writing what their drawings meant. Connecting it to art allowed students to express themselves and provided another means of checking for understanding. The needs of those students whose strengths were in writing were met through the essay assessment. Likewise the needs of those students who were more artistically inclined were met through their drawings and quilt square.
- The chances that the students will remember what they learn are increased because the activity is hands-on. Concepts are represented in the concrete.
- The concept of a "quilting-bee"- chatting while you work- is a timeless experience where children of today can relate to the past.
- The final products-- the quilts-- represented a group accomplishment. The quilts were impressive, more so than any one square. The whole was greater than the parts.
- By working on this at the end of the year, the usual restless energy that can sometimes happen did not occur because students were engaged in something active and meaningful to the
- This activity allows students who become "expert" sewers to instruct and help others. The students who excelled at sewing often were not the same ones who excelled in a traditional classroom environment. This activity allows for different students to show their knowledge and skill.

### **How might students react to this unit?**

- Students whose learning style is not linguistic respond positively because they have greater success in "hands-on" learning.
- Students, in general, view this type of learning as authentic, designed by teachers who care about them, and involving real assignments leading to a tangible final project.
- Students see interconnections and relationships between academic subjects.
- Students see teachers working as a team, encouraging them to work as teams themselves to finish their quilts

### **How can teachers prepare for teaching the unit?**

- Teachers need to work closely to plan all aspects of this unit in advance.
- They need to agree on a classroom management structure from quilting bee rules to distribution of materials. All three teachers were responsible for monitoring student behavior and progress during sewing and all three assisted students in their sewing.
- They need to have knowledge about the goal of the quilts with which they can question/draw out ideas/coach students.
- Teachers will need to read up on basic sewing techniques and quilt construction before beginning. We hand sewed because this was the primary method used by women in the 1800s. To ensure this, students were not allowed to take their sewing home.

## Unit Objectives

### National Council for Social Studies Themes:

**Theme 10:** Civic Ideals and Practices

also connected to:

**Theme 5:** Individuals, Groups, and Institutions

**Theme 6:** Power, Authority, and Governance

### Massachusetts State History and Social Science Curriculum Frameworks:

**Learning Standard 4:** Society, Diversity and the Individual

**Learning Standard 19:** Citizenship

also connected to:

**Learning Standard 2:** Historical Understanding;

**Learning Standard 3:** Research, Evidence, and Point of View;

**Learning Standard 6:** Interdisciplinary Learning: Natural Science, Mathematics, and Technology in History

### Core Knowledge\*:

**4c.** The Northern economic system: capital, industry, labor, trade

**4d.** The Southern economic system: land, agriculture, slavery, trade

**4e.** Jacksonian Democracy and pre-Civil War reformers: popular politics, abolitionism, women's rights, and schooling

**4g.** New immigrants; migration patterns; nativist hostility

**5b.** A nation divided, the failed attempts at compromise over slavery

**6d.** Organizing 19th century labor: aims, strikes, and obstacles

**\* See Commonly Taught Subtopics in the Mass. State History and Social Science Curriculum Frameworks for more details\***

### Massachusetts State Language Arts Curriculum Frameworks:

**Language Arts Learning Standard 2:** Students will pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions and interviews in order to acquire new knowledge.

**Language Arts Learning Standard 20:** Students will select and use appropriate genres, modes of reasoning, and speaking styles when writing for different audiences and rhetorical purposes.

**Language Arts Learning Standard 26:** Students will obtain information by using a variety of media and evaluate the quality of material they obtain.

### Massachusetts State Mathematics Curriculum Frameworks:

**Learning Standards:** *Students engage in problem solving, communicating, reasoning, and connecting to:*

- compute with whole numbers, fractions, decimals, integers, and rational numbers.
- develop, analyze, and explain procedures for computing, estimating, and solving proportions.
- select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods
- use computation, estimation, and proportions to solve problems.
- estimate to check the reasonableness of results of computations and problems involving rational numbers.

## Lesson Activities:

### Social Studies:

- Day One:** Read aloud Sweet Clara and the Freedom Quilt by Deborah Hopkinson. Followed by an analysis of the use of quilts on the Underground Railroad, samples shown such as the flying geese pattern. Students created their own map to freedom on paper as if it were a quilt following the landmarks mentioned in the song sung by African American slaves, "Follow the Drinking Gourd". Emphasized simplicity in drawings so students would start to understand how this would be necessary when sewing.
- Day Two:** Define reform. List areas of social reform we already studied in prior units (such as Immigration/Industrial Revolution and Westward Expansion. Showed sample quilts from American history that contained political or social messages, or, were used as fundraising for such reform activities. Also, facilitated a discussion of women's role in social reform of the 19th century. Showed model from 1st year of quilting, as well as sample squares which did not make it on to the quilt due to poor quality. Again discussed the need for simple designs and neat, careful sewing using these models of high and low quality work.
- Day Three:** Passed out project planning/research packet for reform and went over it with students to clarify. Short readings on various reform movements were set up at different stations around the room. All of the reform areas had been addressed in prior units, but not necessarily in great depth. This was a time for students to refresh their memories and spark individual interests for further research. After moving through each station and reading each piece, students stated their first, second, and third choice for individual study. An attempt was made to see that all students received either their first or second choice. There were enough library resources for two to three individuals to study the same topic. Topics included:
- Abolition • Women's Rights • Women's Suffrage (a large enough issue to separate from women's rights) • Temperance • Education Reform • Labor Reform • Child Labor Reform (again, large enough to separate from labor in general) • Conservation (beginnings of environmental reform) • Prison reform • Reforms for people with disabilities (such as the blind and deaf) • Religious Reform Movements • Reforms for orphans • Settlement Houses for immigrants
- Day Four:** Class time spent in school library while students conducted research on their assigned social reform movement of the 19th century. Issues of *Cobblestone* magazine used as a jumping off point that led to other sources in the library. Students worked on completing planning/research packet on reform which included a notes section. As part of the planning/research packet, students had to complete 2-3 mini-sketches representing the reform movement they studied. Emphasis was placed on accurately representing the goals of the social reform studied and creating simple sketches using symbols that could easily be sewn. These sketches were later enlarged to scale in Math class.

## Language Arts:

- Day One:** Passed out research/planning packet. Read through packet as a class emphasizing why we were learning about reform and school improvement and how these two concepts are connected then focus on school improvement and its focus questions: What is your school improvement plan? What is the goal of your school improvement plan? Explain what inspired your focus on this goal and/or give an example of someone else's approach to this problem. How do you plan to achieve this goal? Worked in pairs or small groups generating potential plans/goals. Then had a whole class discussions where group shared up to 3 ideas which were recorded by the teacher on the overhead. Encouraged students to react and interact throughout this process, and made sure each group was represented. Providing a teacher model of a brainstorm idea or developing one idea as a whole class before breaking into groups, depending on your class and their needs, is an effective way to prime the pump.
- Day Two:** Passed out "School Improvement Questionnaire/ 'Statementaire'" which was based on prompts selected from 2000 Voices. 2000 Voices is a book that presents and analyzes middle grade students' responses to a wide variety of interesting questions and issues facing young adolescents. The prompts used on the "School Improvement Questionnaire" were selected based on their potential to help students widen their perception of possible school improvement plans/goals. The following is an example of one of the ten open response questions: "What is important to know in order to get through life? For example, a three year old would say your name and address, what would you as an eighth grader say is important to know? It is important to know..."If students are stuck or time remains have students share in small groups to spur on further creativity and open additional avenues of thought and perspective.
- Day Three:** Handed out a packet of photocopied pages from 2000 Voices. This packet was used by students to compare their own responses to those of similarly aged students of a different population highlighted in 2000 Voices . For example, pp.115-116 from Appendix B of 2000 Voices was included in the packet because it enumerated kids responses to the "A Good Teacher" prompt that was in the questionnaire. Went over each prompt, first having students share their own responses then comparing them to those of the youth from 2000 Voices. Model how their responses could inspire a plan/goal. For example, this year a student used "A Good Teacher" as a jumping off point on which to focus. Her goal was to have teachers who used both their brains and their hearts because she believed good teachers needed to balance their teaching of content with their care and concern for students.
- Day Four:** Selected best idea for school improvement plan and developed it by responding to four focus questions (see Day One). Students then began to draft 2-3 mini-sketches representing their school improvement plan that could be sewn in a quilt square. These sketches were later enlarged to scale in Math class.

### Social Studies and Language Arts Combined:

**Days Five-Six:** Language Arts and Social Studies classes were combined. Students drew out of a hat to determine whether their quilt square would represent their school improvement plan or the social reform they studied. (We needed an equal number of both social reform and school improvement). Students spent time in class and at home preparing a mini-lesson on their quilt square topic.

**Days Seven-Eight:** Students made class presentations/mini-lessons of the quilt square topic, these were done individually or with a partner who chose the same topic. At this time, a presentation of one enlarged scale drawing was made for student feedback.

### Mathematics Lesson Activities:

**Day One:** Students bring in pictures, which interest them, from magazines focusing on objects - sports equipment, music labels, articles of clothing, etc. Students mark off all or part of the pictures to form three by three-inch squares. Within the squares they mark off quarter by quarter-inch grids. Students are then given twelve by twelve-inch grids, marked off in one-inch squares. Students work from their quarter-inch grids to the one-inch grids, enlarging the pictures they have selected. Students color these for display of their interests.

**Day Two:** Discuss enlarging. Where is it used? Students then enlarge at least one of their selected reform/school improvement three-inch squares for the purpose of preparing a pattern for the quilt square they will be sewing. Give students white construction paper twelve by eighteen inches. Students cut the white construction paper to twelve by twelve-inch squares on which to enlarge the quilt pattern design. Students measure and lightly line the twelve by twelve-inch paper to form one-inch squares. Students enlarge the drawing in each of the quarter-inch squares to the one-inch corresponding grid. Once all one hundred forty-four quarter-inch squares have been enlarged, grid lines can be erased and the large twelve-inch squares can be colored. The finished twelve-inch squares become the patterns for the quilt.

**Day Three:** Discuss area related to this activity. What is the area of each of the twelve-inch squares? What is the area of each of the three-inch squares? How many times greater in area is each of the twelve-inch squares compared to the three-inch squares? Students will work in pairs to find two different ways to explain the answer to this problem. Students should come to the overhead to explain their results to the class. Next students in pairs will write a problem, which requires enlarging a picture. They will ask a question related to comparing the areas and show at least two different solutions to the problem. These problems will be shared in class and displayed. They will become part of an activity/quiz/bank of questions.

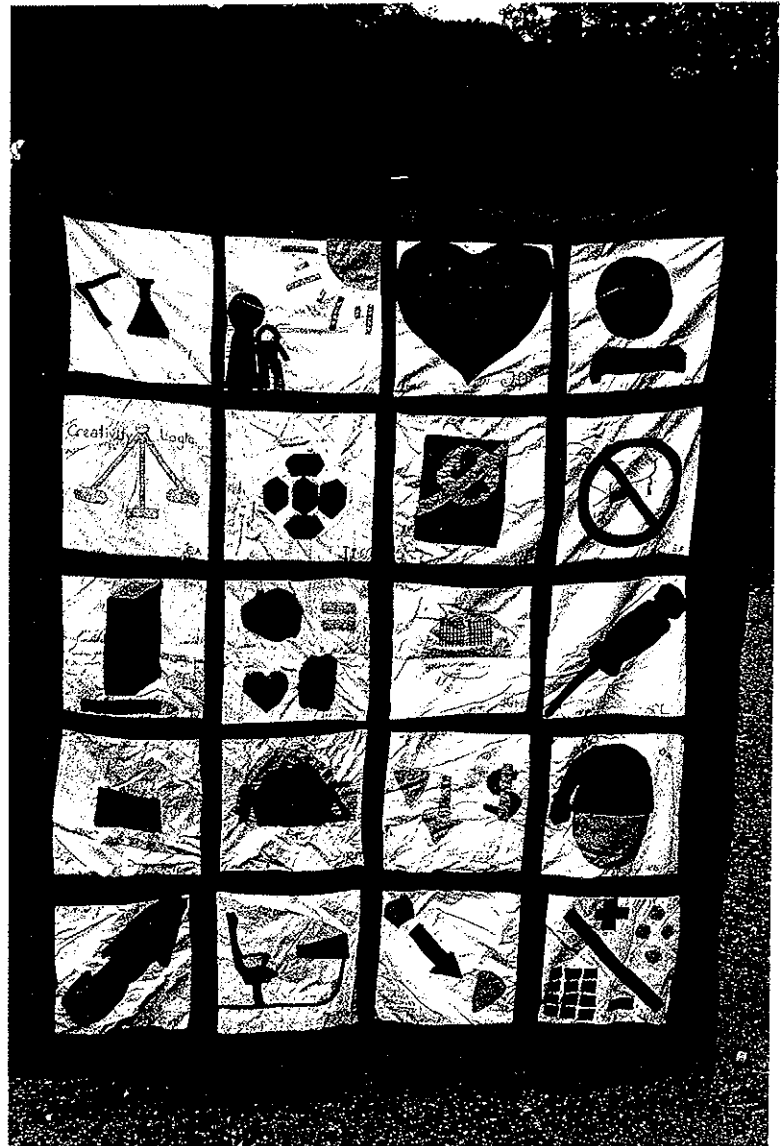
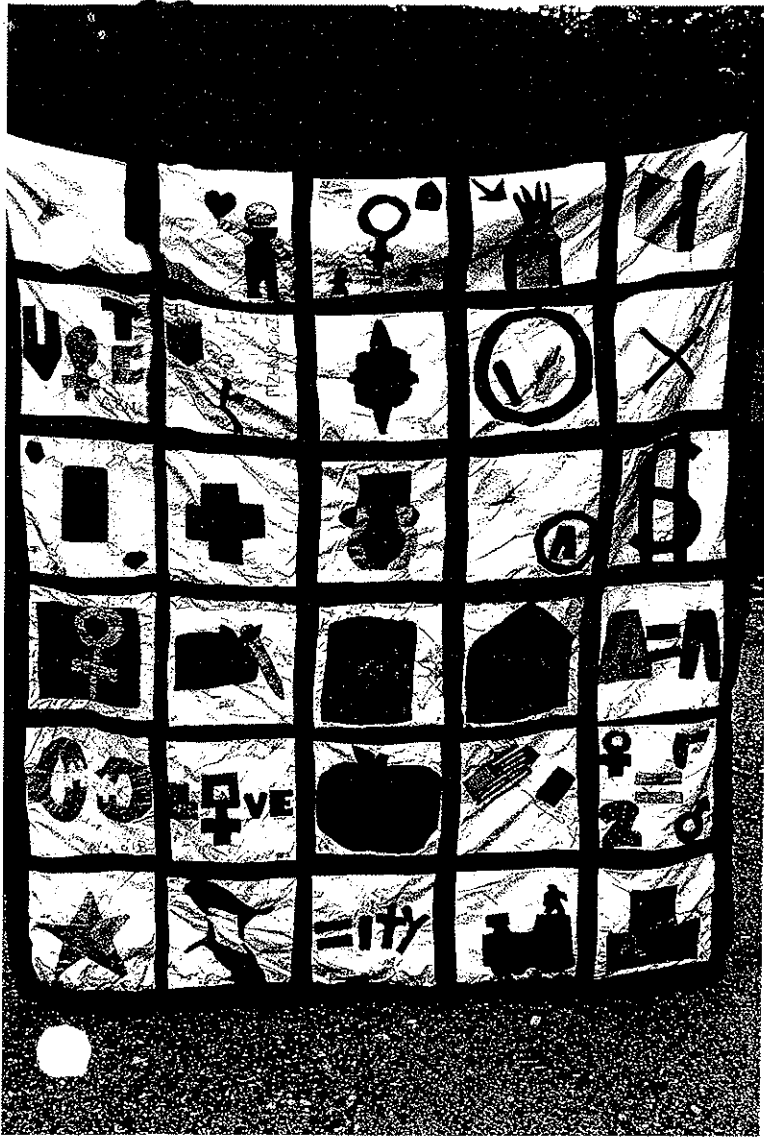
**Day Four:** Students will be given scaling problems from other standards-based resources: texts, tests, student bank of problems, and other assessments. Students will work in pairs to apply what they have learned to these other problems.

### **Team Lesson Activities:**

These activities will take a number of days. Plan on at least two weeks of work using classtime during all three subjects. We combined our classes in a large class space to create a real team effort for the students.

1. Conducted first lesson on sewing basics: threading a needle, measuring for accuracy, tying a knot, pinning, making a running stitch, tying off at the end of the thread. All important safety issues were discussed and quilting bee rules established. Students cut, pinned and sewed a border which served as a practice time while they grasped the new skills.
2. When border was complete, students cut paper patterns for their quilt square design. They then chose fabric and cut out their pieces. They first pinned their pieces tucking under frayed edges, then sewed a running stitch to secure the pieces to their quilt squares. Pinning was very important--no frayed edges could exist, students either had to tuck them under or baste the pieces before pinning them down.
3. Sew all squares together, this may need to be done after school or you could ask a parent volunteer to do it by machine (cheating a little, but time constraints may make it necessary). After all the squares had been sewn together, students tied the three layers of the quilt together using simple square knots and embroidery thread.





### **Materials Needed For Quilting:**

- muslin for squares
- colored broadcloth for borders
- 1 yard lengths of solid and printed cotton fabric
- quilting thread
- pins
- pin cushions
- thimbles
- hand needles
- scissors (for cutting fabric)
- scissors (for cutting paper)
- chalk
- rulers
- cutting surface
- embroidery thread
- batting
- backing
- construction paper
- markers
- (Math only: one-quarter inch graph paper, 12" by 18" white construction paper)

### **Assessment:**

- Presentation/Mini-Lesson
- Work Habits during Research and Sewing Sessions
- Written Assessment--Essay
- Math problems

### **Resources for Teachers and Students:**

You will want to browse through your local library to find resources on both the basics of quilting and pictures of historical quilts. You may want to make contacts at sewing supply shops and local sewing or quilting societies.

Sweet Clara and the Freedom Quilt by Deborah Hopkinson

2000 Voices edited by Cynthia Mee

The Young Reader's Companion to American History edited by John Garraty

History of US: Liberty for All? by Joy Hakim

*Cobblestone Magazines* related to 19th century social reform

America's Quilts and Coverlets by Carleton L. Safford and Robert Bishop

Hearts and Hands: The Influence of Women and Quilts on American Society by Pat Ferrero, et al.

Pieced by Mother by Jeanette Lasansky

The Quiltmakers Handbook by Michael James

Quilts: Visions of the World edited by Bonnie Leman

Quilt books from various cultures: ex: Simply Seminole by Dorothy Hanisko

**Social Reform and School Improvement Quilt Project**  
**Language Arts and Social Studies Assessment**  
**Team 8B -- Greenfield Middle School**

Name: \_\_\_\_\_

You will receive two project grades for both Social Studies and Language Arts for your work in this unit. The first project grade is for your work in research, planning, and sewing your quilt square. Your actual square will not be graded, but your effort will be an important part of your grade during the planning and construction times. Your second grade will be an essay which you may begin writing any time after you have completed your class presentation. This essay is due at the conclusion of this project along with your quilt square.

**Research/Planning/Sewing:**

Produce a creative presentation/mini-lesson on your research topic to be shared with the class.

\_\_\_\_\_ / 40 pts.

Demonstrate ability to work in an unstructured group and to socialize appropriately. Show care and concern by helping others with their sewing. Exhibit exceptional perseverance.

\_\_\_\_\_ / 40 pts.

Turn in your completed research/planning packet.

\_\_\_\_\_ / 20 pts.

Subtotal = \_\_\_\_\_ / 100 pts.

**Bonus Points:**

Bring in a pin cushion, or, thimble. (5 points)

+ \_\_\_\_\_ pts.

Take part in the Community Service Learning Fair. (10 points)

+ \_\_\_\_\_ pts.

Total = \_\_\_\_\_ / 100 pts.

**Written Assessment:** (Use the following guidelines for your written assessment.)

Essay title: From 19th Century Social Reform to 21st Century School Improvement

Introductory paragraph: Make an articulate connection between social reform and school improvement.

Paragraph 2: Explain quilting as a part of women's role in history.

Paragraph 3: State, explain, and defend the goal and/or outcome of the reform movement you studied/the school improvement idea you developed.

Paragraph 4: Explain how the reform movement you studied/school improvement idea you developed apply to you and present day society.

Conclusion: Make projections for the future about schools and about society.

Total = \_\_\_\_\_ / 100 pts.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

MATH \_\_\_\_\_

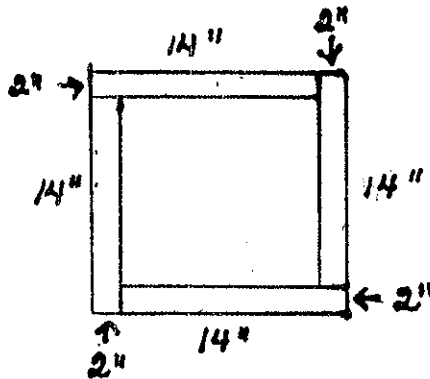
SWABAT- SOLVE OPEN-ENDED PROBLEMS \_\_\_\_\_

## A TRUE STORY

### WHICH PLAN DO YOU THINK IS BETTER? WHY?

#### Introduction-

Mrs. Clarke (Community Service Learning), Ms. Kelly, Ms. LaRoche and Ms. Tuttle went to THE TEXTILE COMPANY to purchase the fabric for the quilts. One decision they had to make was how much black border to buy. We need enough for two hundred squares (each student will be making one reform and one improvement 12-inch by 12-inch square). Around the square will be a black border. For each square, four 14-inch by 2-inch strips will be needed. See the illustration below.



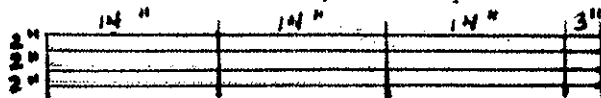
#### The Problem --

The black cotton cloth is sold 45 inches wide by the yard. (36 inches = 1 yard) The cost per yard is \$3.69.

1. How many yards would be needed to make borders for 200 squares [ 4 X (14 X 2) per square]?
2. What would the cost be?
3. How much waste would there be?

#### The Solution- Plan I

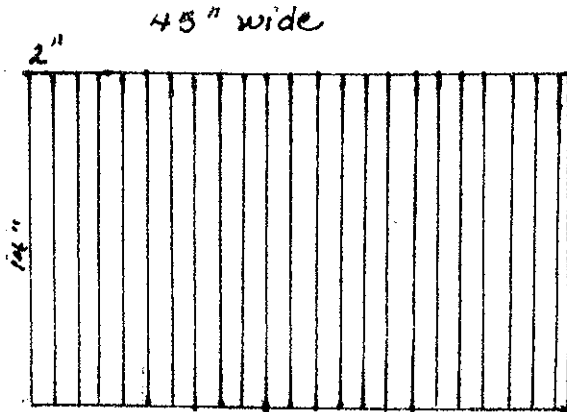
Ms. Tuttle did not have her calculator with her, so she began to work with paper and pencil. If the cloth is 45 inches wide, then three 14-inch by 2-inch strips could be cut across the width.



Your task is to figure out how many yards of cloth should be bought. Use the information in the problem. Remember that there are 36 inches in a yard. How many strips will you need? In this plan three strips can be cut across the material.

The Solution-Plan II

"Wait a minute," said Ms. Kelly. "I think we could save money if we made the strips in the other direction." We could get 22 strips across the fabric's width. See the illustration below.

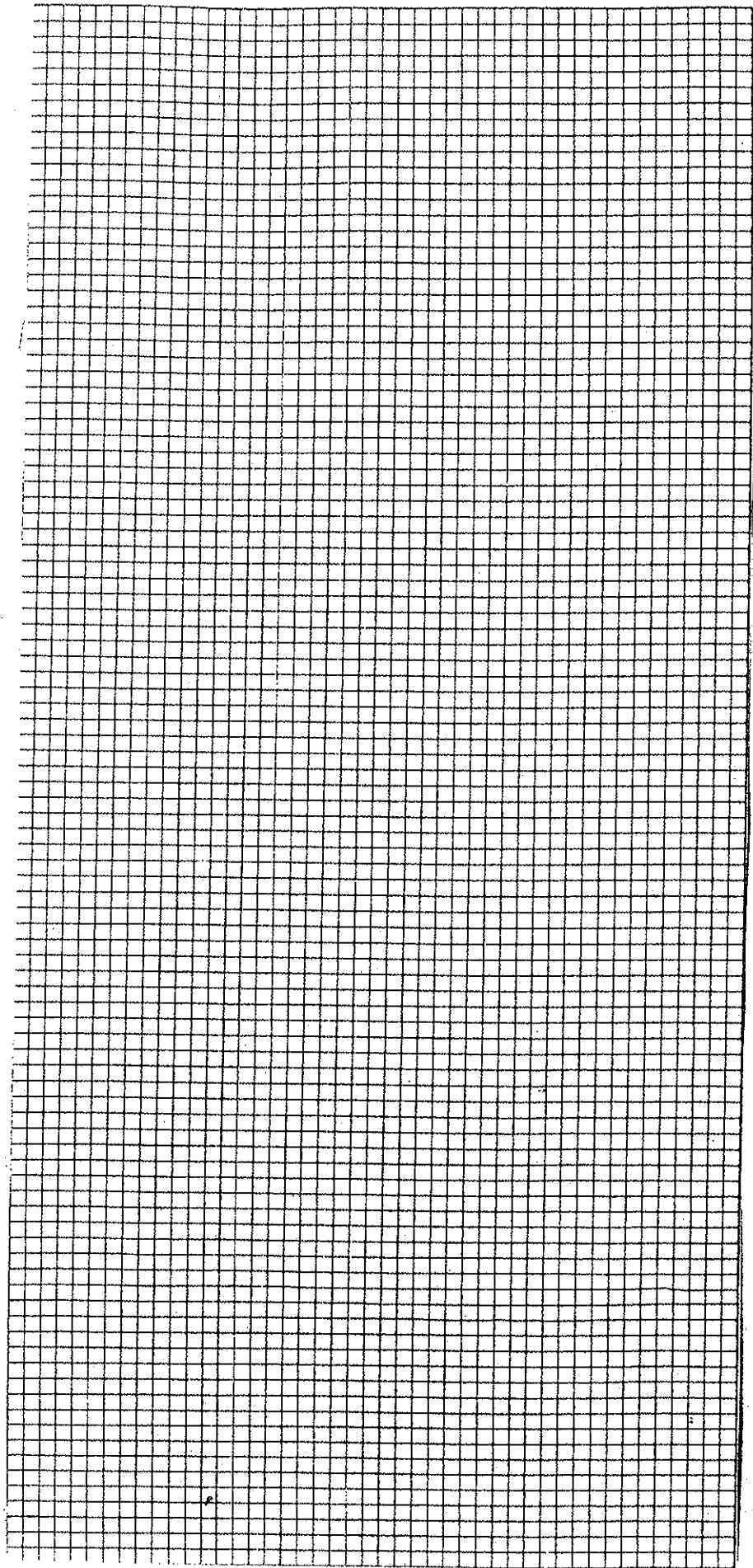


Your task is to rework this problem using Plan II. Answer the following questions.

1. How many yards would be needed to make borders for 200 square [ 4 X (14 X 2) per square ]?
2. What would the cost be?
3. How much waste would there be?

Your Opinion:

1. Which plan is better? Why?
2. Does it matter which way the strips are cut on the fabric? Explain.
3. What did you learn from solving this problem?



Name \_\_\_\_\_

Date \_\_\_\_\_

Math- \_\_\_\_\_

The Solution - Plan II \_\_\_\_\_

***Directions: Write in complete sentences. Explain your solution fully so that anyone reading your solution can completely understand your thinking and the math steps you took to solve the problem. Show your work for any math answers. Your final response should be on the college-ruled lined paper provided in class. The following are suggestions as to how to organize your ideas in a way that the reader can understand them.***

This problem is asking me to find out... (Write two or three sentences which focus on what you are about to do.)

I know that there are... [Write down what information you already have such as the number of squares, the number of strips per square, the total number of strips which need to be cut (show how you computed this mathematically), the width of the bolt of cloth, the number of inches in a yard.] You may include a simple sketch which illustrates the bolt of cloth and a yard in inches.

I need to figure out... (Explain specifically what you need to calculate in order to know how much cloth to buy if you are using Ms. Kelly's vertical plan.)

you determined the cost. As in *Plan I*, you can decide whether or not the school was charged a tax.)

There would be \_\_\_\_\_ of waste material using this plan. (You also need to indicate the amount of waste in your plan. Explain how you determined the waste. Show a sketch and the math that supports your answer.)

*Finally, answer the three questions that are also on the problem sheet.*

I think that Ms. \_\_\_\_\_'s plan is better because... (Explain your choice giving supporting details.)

I think it does/does not matter which way the strips are cut on the fabric because.... (Explain your choice giving supporting details.)

From solving this problem, I learned...

*The Solution-Plan II* counts as a quiz grade. If you want extra credit (and I hope some of you do), you can rework *The Solution -Plan I* and receive extra credit for it.



Name \_\_\_\_\_  
Date \_\_\_\_\_  
Math \_\_\_\_\_  
Assessment \_\_\_\_\_

### **UNDERSTANDING**

- 1 - There is no solution to the problem.
- 2 - There is an incomplete solution to the problem.
- 3 - There is a solution to the problem.
- 4 - There is a complete solution to the problem and a deep understanding of the mathematical concepts shown.

### **STRATEGIES, REASONING, PROCEDURES**

- 1 - There is no evidence of strategies, reasoning or procedures that lead to the solution.
- 2 - There is a strategy that is partially useful, leading somewhat toward a solution, but not to a full solution of the problem.
- 3 - There is a strategy used that leads to a solution of the problem with all parts correct and a correct answer achieved.
- 4 - There is a very efficient and sophisticated strategy used that leads to a correct solution. The writer verifies the solution and/or evaluates the reasonableness of the solution.

### **COMMUNICATION**

- 1 - There is no understandable explanation to the problem.
- 2 - There is an incomplete explanation; it may not be clearly presented.
- 3 - There is a clear explanation with appropriate math terminology and notation.
- 4 - There is a clear, effective explanation detailing how the problem is solved. All of the steps are included so that the reader does not need to infer how and why decisions were made. There is precise and appropriate use of mathematical terminology and notation.

### **COMMENTS**

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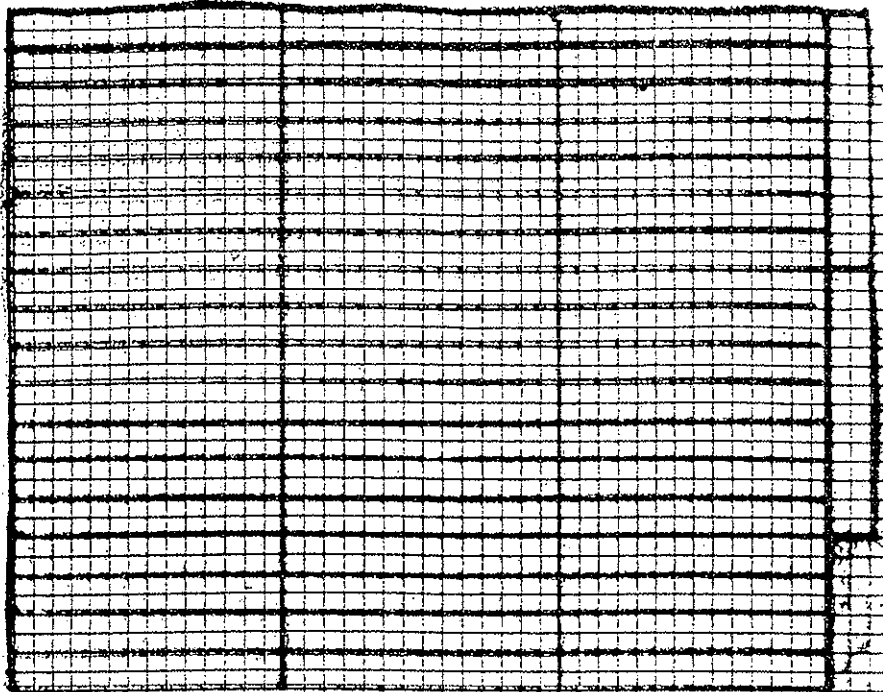
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Plan I

56 strips

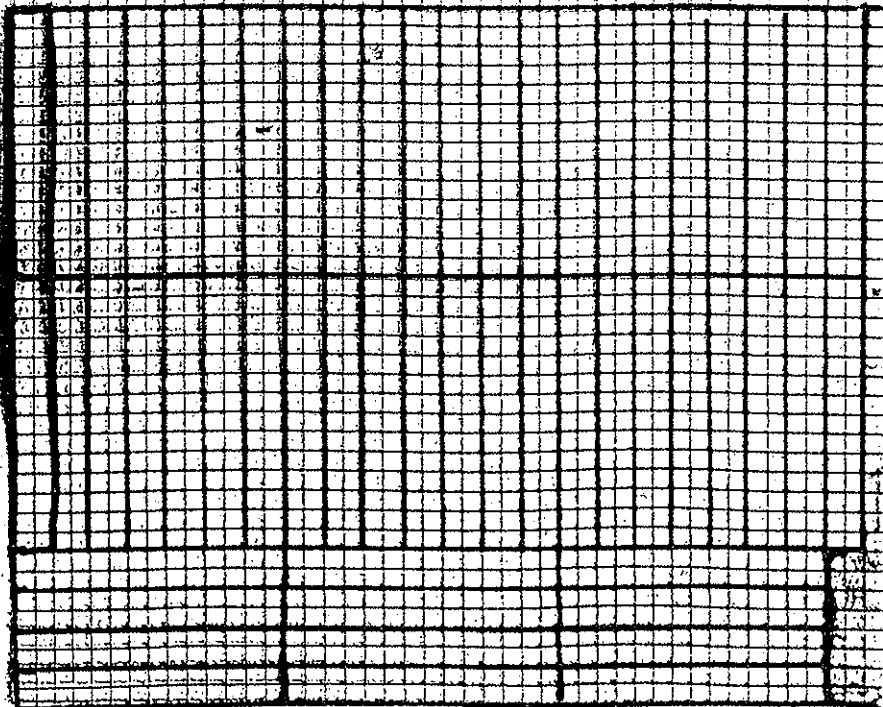
52 sq. in.  
waste



Plan II

56 strips

52 sq. in.  
waste



From a math perspective, both plans are equal.

This shows the type of work a student might do.

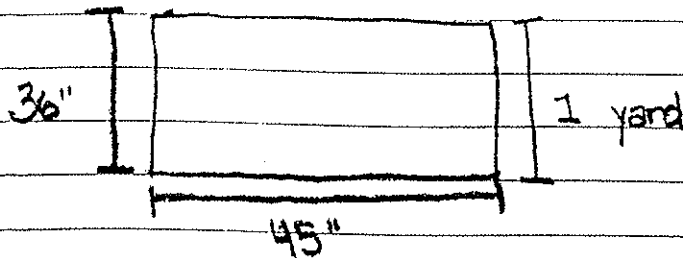
June 6th, 2000  
MathC  
The Solution - Part II

1. This problem is asking me to find out how much cloth we should buy and what will be left over as waste after cutting out all of the strips. I am also being asked to find out how much this amount of cloth will cost.

2. I know that:

- There are 200 squares.
- You need 4 strips per square.
- There are 800 strips total.
- Each yard of cloth is 45" wide.
- There are 36 inches in a yard.
- Each strip is 14" long.
- Each strip is 2" wide.

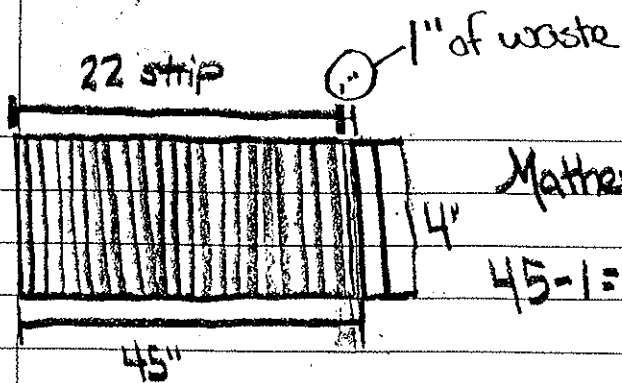
This is a yard of cloth:



3. I need to figure out how many strips can fit across 45" and then find out how many rows and yards this will take.

4. First I find out how many strips fit across a bolt of cloth.

OVER →



Mathematically -  $\frac{45}{2} = 22$  Remainder 1  
strips was

$45 - 1 = 44$  used

5. Next I found how many inches long the cloth needs to be. To do this I divided 800 (total strips needed) by 22 (the number of strips in a row) to find that I would need 36 full rows and that would be 504 inches. I now started to draw. First I counted each square across as 1 inch and each square up as 7 inches. I counted 72 squares up to make 504 inches. Now I figured out that 36 rows of 22 strips was 792 strips. This means that I need 8 more strips. Now, at the top of my graph, I drew an enlarged version of 9" where each square is 1 inch both across and up. I fit in the remaining 8 strips horizontally. This makes the cloth 510" long. See graph paper.

Math:

$$800 / 22 = 36 \text{ (full)}$$

$$36 \cdot 14 = 504"$$

$$504 / 7 = 72 \text{ squares}$$

$$36 \cdot 22 = 792 \text{ strips}$$

$$800 - 792 = 8 \text{ strips}$$

$$3 - 2 = 6$$

$$504 + 6 = 510"$$

6. Then I found out how many yards 510" is. 510 divided by 36 (inches in a yard) equals 14.17. Since you cannot round down, you have to round up to 14.25 yards (or 513" on the graph).

Math:

$$510 / 36 = 14.17 \approx 14.25 \text{ yds.}$$

$$14.25 \times 36 = 513"$$

7. The cost for 14.25 yards of black cloth is \$52.58 without tax or \$55.21 with 5% tax added. I got this by first multiplying 14.25 by \$3.69 and I got \$52.58. To find out what it would be with tax, I multiplied this by 1.05 and got \$55.21.

Math:

$$\$3.69 \times 14.25 = \$52.58$$

$$\$52.58 \times 1.05 = \$55.21$$

8. There would be 675 square inches of waste. I determined this from my drawing. For the entire length of the cloth, there is a one inch wide strip of waste on the edge. This means that you have a  $1 \times 513$  inch strip of waste ( $513''^2$ ). Next you need to look at the drawing. There is a  $2 \times 9$  inch rectangle of waste next to the  $1 \times 513$  inch strip. This makes 18 more square inches ( $531''^2$ ). Now there is a place where another strip could fit, but you don't need it so you now have another  $2 \times 14$  inch rectangle.

of waste ( $28''^2$ ). Your new total is  $559''^2$ . You have one more rectangle of waste that is  $3 \times 42''$  ( $9-6 \times 45-3$ ). This equals  $126''^2$  of waste so your total waste is  $685$  square inches of waste.

Math:

$$1 \times 513'' = 513''^2$$

$$3 \times 42'' = 126''^2$$

$$2 \times 14'' = 28''^2$$

$$2 \times 9'' = 18''^2$$

$$513 + 126 + 28 + 18 = 685''^2$$

9. I think that Ms. Kelly's plan is better because you can purchase less cloth which brings down the price.

10. I think that it does matter which way the strips are cut on the fabric because if you cut the strips vertically (for the most part) you only need to buy  $14.25$  yards of cloth instead of  $14.5$ .

11. From solving this problem, I learned that there are many different ways to approach a problem and your first instinct should be reviewed to see if you can improve on it. When you ask other people their views on it, you may find another option which is completely different, yet better.