

TRADITIONAL HAWAIIAN QUILTING

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Part 1: Introduction and History

Every culture has traditions that are passed down from generation to generation. These traditions are important portals to the past. They are also what keeps the history of our culture alive and thriving. There are so many things that make Hawai'i unique, traditions being one of them. One tradition that is making a comeback is the art of Hawaiian quilting. This tradition was once heavily guarded within 'ohana, and it was the role of tūtūs, mothers, and aunts to pass down patterns and to instruct younger quilters (Arthur, 2002). Since then the art form has come out from behind closed doors, allowing people around the world to celebrate the beauty and history of Hawai'i in such a unique and bold way.

Before the introduction of woven fabrics to the islands, Hawaiian women would spend hours beating kapa, a bark cloth made from the inner bark of the wauke (paper mulberry) plant. This bark cloth was dyed and elaborately decorated with geometric block prints and was used for bedding and festive clothing (Arthur, 2002). With the arrival of Westerners, new fabrics and sewing techniques were introduced to the Hawaiian women. In the 1820s missionary wives taught the Hawaiian women how to quilt, which soon replaced kapa making (Serrao et al., 2007). The missionary wives taught them the early American style of quilting called patchwork, where small scraps of fabric were sewn together to create patterns. To the Hawaiian women, this method seemed illogical: why would one cut a large piece of material into small strips only to sew it back together again? This inspired the Hawaiian women to incorporate kapa traditions within the designs of their quilting (Arthur, 2002). There is an old story that, on one sunny day, a Hawaiian woman lay fabric in the grass to dry, and when she went to collect it, she noticed a leafy shadow cast onto the fabric by the overhead breadfruit tree. She quickly got her scissors and cut out the shadowy pattern. When the fabric was initially folded into fourths and then cut, the unfolded fabric displayed a perfectly radially symmetrical design. This design was then placed on a bigger piece of fabric and hand stitched to it, and thus the first Hawaiian appliqué quilt was born.

This technique quickly found its way through the islands, and before long, Hawaiian women were creating unique quilts depicting

the beauty found on each of the islands (Kearns, 2012), looking to their gardens and the 'āina for inspiration for their designs. It is also very common to see these quilts in only two solid-colored fabrics. The appliqued design was often done in a bright color and attached to a pale-colored background. Red, green, and yellow against a white background were some of the most common color combinations. One of their most defining and unique aspects is how the quilts always showcase such perfect balance and symmetry. This was accomplished by the way in which the women folded and cut the fabric. Traditionally the patterns were cut on the eighth, meaning that the fabric would be folded in half three times (i.e., $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$). When cut and then unfolded, the design would resemble a snowflake. After the symmetrical design was completely stitched onto the background fabric, the quilter would then use an echo stitching around the appliqué, sewing repeating rows that follow the contour of the appliqué out to the very edge of the quilt. This created a rippling wave effect around the central design that is said to represent the ocean waves and currents around the islands (Arthur, 2002).

“Every stitch had a meaning and every part of the design had a purpose.” -Serrao, 1997

Not only were traditional Hawaiian quilts created to depict the natural beauty of the islands, but they also served as a way to keep Hawaiian culture and history alive. With the overthrow of the Hawaiian monarchy, the Hawaiian flag was lowered. Fearing that they would never see their flag again and as a sign of silent protest, Hawaiian quilters incorporated their flag along with other symbols of old Hawaiian royalty into their designs (Root, 2001). Examples of this Ku‘u Hae Aloha (“My Beloved Flag”) quilt are on display at museums across O‘ahu (Brandon, 1993). These quilts were hidden and kept out of sight in many homes. However, some brave quilters created reversible quilts with the top side being a traditional Hawaiian pattern and on the underside their proudly quilted Hawaiian flag.

On the surface it has been the evolvement of an entirely unique method of quilting. Underlying, it is the embodiment of the spirit of a people, rich in creativity and sensitivity, who have shared, through this art form, not only their history and personal observations - but also their feelings and sentiments

during a time in their lives, filled with extraordinary change and emotion (Root, 2001).

The art of traditional Hawaiian quilting an integral part of Hawaiian history, rich with beauty, balance, and cultural pride. It is important that this unique art is not lost but instead be passed down to the generations to come.

Part 2: Goal of Lesson Plan

The goal of this lesson is to introduce students to the rich cultural history behind traditional Hawaiian quilting and find practical mathematical applications in this unique art form. Some of the common mathematical concepts that can be found in quilting are measurement, shapes, symmetry, area and perimeter, patterns, fractions, and coordinate plotting. An additional goal of this lesson is the overall growth of the student. A few General Learner Outcomes (GLOs) to focus on while doing this lesson include:

- ◇ *Self-Directed Learner*: the ability to be responsible for one’s own learning;
- ◇ *Complex Thinker*: the ability to demonstrate critical thinking and problem solving;
- ◇ *Quality Producer*: the ability to recognize and produce quality performance and quality products (Hawaii State Department of Education, 2012).

In addition, we as teachers must hold ourselves to the highest level of our profession. A lesson incorporating local culture into mathematics can help satisfy state regulated teacher performance standards, such as:

- ◇ *Standard #2: Learning Differences*: The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards;
- ◇ *Standard #5: Application of Content*: The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues;
- ◇ *Standard #7: Planning for Instruction*: The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context (Hawai‘i Teacher Standards Board, 2012).

Part 3: Methodology

There are many possible lessons that can incorporate Hawaiian quilting. Here are a few seeds that have the potential to grow into lessons. All of these ideas are based on the Common Core math standards for elementary grades. However, they can be adapted and developed to satisfy secondary standards as well.

SHAPES & PATTERNS:

Although very important in the younger elementary grades, these concepts could still serve as fun projects done with older students. Bring a simple Hawaiian quilt into class or have a large picture of one available for students as a reference. Using the simple design of the appliqué, have students use tangrams and/or pattern blocks to recreate part of the design. This gives students great hands-on practice with identifying shapes and exploring shape orientation. It also allows them to see patterns within the quilts. Using these differently-shaped blocks is one way to let children's imaginations run wild while teaching important concepts.

MEASUREMENT:

Bring a quilt or two into the classroom for students to see and experience firsthand. Have younger students see and explore the measurable attributes of the quilt (e.g., length and width). Have older students physically measure a quilt or make one of their own using standard and nonstandard measurements. This could also be a way to introduce and practice using area and perimeter. Again, have students work with real quilts to find the amount of fabric needed to make a boarder of the quilt or how large of an area the quilt will cover. Giving them these hands-on opportunities will solidify what they are learning. The possibilities for teaching measurement through quilting are endless!

FRACTIONS:

To create a traditional Hawaiian quilt, the fabric must be folded in half ($\frac{1}{2}$), and then half again ($\frac{1}{4}$) and half again ($\frac{1}{8}$). There are so many different fractions that can be seen and used in quilting. Create Hawaiian quilt fraction puzzle cards for students to play with. To make these, take pictures of Hawaiian quilts, or create your own, and cut them into different fractions. The students can then use the cards to practice their fractions by matching the quilt designs. Another idea is to give students pieces of paper to fold and from which to cut out their own designs. Then have the students color and label the appropriate fraction. These can then be hung around the classroom as beautiful decorations and as visual reminders of what the students learned.

SYMMETRY:

Symmetry is often the first most prominent mathematical concept when looking at traditional Hawaiian quilts and rightfully so. These quilts were designed to be symmetrical and balanced, therefore giving us a perfect tool to teach symmetry! There are often many lines of symmetry within a single traditional quilt. Show your students pictures of many different quilts (see "Teacher References"), or better yet, take them to the Mission Houses Museum to show them one of the largest collection of Hawaiian quilts. During your visit ask the students to find the number of lines of symmetry in each of the quilts. The paper folding activity is also a great tool for teaching symmetry, and it allows the students to design their own traditional quilt pattern. For a more high-tech version of this, visit "Math is Fun! Symmetry Artist 2" online (within "Teacher References" under "Websites"). Students are able to adjust different variables to create an array of patterns. Using this interactive program, have students create and share their own quilt patterns.

TEACHER REFERENCES:

BOOKS - The following offer a wealth of information and have beautiful, large, color pictures.

- ◇ *Contemporary Hawaiian Quilting* by Linda Arthur;
- ◇ *Hawaiian Quilt Masterpieces* by Robert Shaw;
- ◇ *Hawaiian Quilts, Tradition and Transition* by Reiko Brandon and Loretta Woodard;
- ◇ *The Hawaiian Quilt* by Reiko M. Brandon;
- ◇ *The Hawaiian Quilts, the Tradition Continues* by Poakalani Serrao.

STORY BOOK - *Luka's Quilt* by Georgia Guback is a fun and beautifully illustrated children's book -- a great way to lead into the lesson.

WEBSITES - These sites provide history, instruction, pictures, and online teaching tools:

- ◇ Math Is Fun! Symmetry Artist 2: <http://www.mathsisfun.com/geometry/symmetry-artist2.html>; and
- ◇ Quilts Hawaii: <http://www.quiltshawaii.com/>.

MUSEUMS - Here are a few museums within the state that have traditional Hawaiian quilts on display:

- ◇ Island of O'ahu: Mission Houses Museum, Bishop Museum, Honolulu Museum of Art;
- ◇ Island of Kaua'i: Kaua'i Museum; and
- ◇ Island of Hawai'i: Mauna Kea Beach Hotel.



Original quilt design by Jessica Evans

Part 4: Conclusion

This is only a brief introduction into the beautiful art form of traditional Hawaiian quilting and some of the ways we can use it to enrich our students' learning experience. Hawai'i is host to rich and beautiful culture, and the purpose of lessons like this is to bring our students out of the classroom and into a world of extraordinary learning opportunities. Let these small lesson "seeds" take root in your class and they will grow into beautiful experiences for your students. A quilter once said, "Every stitch had a meaning and every part of the design had a purpose" (Serrao, 1997, p. 112). May you keep these words with you as you stitch and weave local culture into your teachings and classroom, giving every lesson a deeper more meaningful purpose. Aloha.

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