

Grade 1 Clarifying Lessons: Geo-Wrap Vests

OLD Resources. These resources have NOT yet been updated to align with the revised elementary mathematics TEKS. These revised TEKS were adopted by the Texas State Board of Education in 2005, with full implementation scheduled for 2006–07. These resources align with the original TEKS that were adopted in 1998 and should be used as a starting point only.

What is a Clarifying Lesson?

A model lesson teachers can implement in their classroom. Clarifying Lessons combine multiple TEKS statements and may use several Clarifying Activities in one lesson. Clarifying Lessons help to answer the question "What does a complete lesson look like that addresses a set of related TEKS statements, and how can these TEKS statements be connected to other parts of the TEKS?"

TEKS Addressed in This Lesson

Patterns, relationships, and algebraic thinking: 1.4A

Geometry and spatial reasoning: 1.6A, B, C

Underlying processes and mathematical tools: 1.12A, B

Materials

- various colors of construction paper
- foam cut-out geometric shapes
- tempera paint
- butcher paper or large brown grocery bags (one per student)

Lesson Resources

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Lesson Overview

Students use geometric shapes to create and extend patterns.

Mathematics Overview

Students use informal and mathematical language to describe the patterns they create with combinations of shapes such as circles, triangles, and rectangles including squares.

Set-up (to set the stage and motivate the students to participate)

1. Read *Aida* to class and show students pictures of the African garments.
2. Show other pictures of African garments.
3. Have students identify patterns in the garments. (1.4A, 1.12A)
4. Explain to students that Ashanti Kente Cloth originated in West Africa and the Kitanga Cloth is from East Africa. Explain that, in the United States, African-Americans are wearing the Kente Cloth as scarves (head wraps), dashikis (tunics), and other garments. (If you can obtain a piece of Kente Cloth, have students discuss the patterns they see in the cloth.) (1.4A, 1.12A)
5. Show students how to use tempera paint and foam cut-out geometric shapes to make imprints onto butcher paper or grocery bags cut into the shape of a vest. (1.6C)
6. Have students make geo-wrap vests, similar to the dashikis, with a pattern, so they can have a fashion show and model for the other classes. (1.4A)

Teacher Notes (to personalize the lesson for your classroom)**Guiding Questions (to engage students in mathematical thinking during the lesson)**

- What are some other patterns you have learned about or used? (1.4A)
- What things can you think of that do not have patterns? (1.4A)
- What is the difference between looking at a picture with a pattern and looking at one without a pattern? (1.4A)
- What geometric shapes are you planning to use to create your pattern on your vest? Why? (1.6B, C; 1.12A, B)
- How many times do you think you will be able to repeat your pattern on your vest? How did you arrive at your estimate? (1.12A, B)

Teacher Notes (to personalize the lesson for your classroom)

Summary Questions (to direct students' attention to the key mathematics in the lesson)

To determine how comfortable the students are with using informal and mathematical language to describe their patterns, ask questions such as:

- How would you describe your pattern? (1.4A, 1.6B, 1.12A)
- How is your pattern different from others in your class? (1.4A)
- Why did you use the shapes you used? How did you decide on your pattern? (1.6B; 1.12A, B)

To encourage students to identify a variety of attributes of the geometric shapes and the patterns made, ask questions such as:

- If you had to sort the vests the class made into different groups, what groups would you make? What characteristics would you use for sorting? (For example, students might sort vests into ones that have circles in their patterns and ones that don't, or ones that use more than three shapes in their patterns, ones that use exactly three shapes, and ones that use less than three shapes, etc.) (1.6A)

Teacher Notes (to personalize the lesson for your classroom)**Assessment Task(s) (to identify the mathematics students have learned in the lesson)**

- Have students use informal and mathematical language to write in their mathematics journal a description of the pattern on their vest.
- Have students trade patterns (or give students teacher-made patterns) and have them draw or select, and describe, what comes next in the pattern.

Teacher Notes (to personalize the lesson for your classroom)**Extension(s) (to lead students to connect the mathematics learned to other situations, both within and outside the classroom)**

- Students can write an invitation to another class to come view the geo-wrap vests. Students can describe the activity they did and what they learned from it in a way that would make the class interested in coming. They can decorate the invitation with an example of their pattern around the border.

- Students can use computer software (e.g., *Print Shop*) to generate invitations with patterned borders to match or coordinate with their vests.

Teacher Notes (to personalize the lesson for your classroom)