

## **Multicultural Mathematics**

*the origins of mathematics around the world*

Rachel W. Hall

St. Joseph's University

[rhall@sju.edu](mailto:rhall@sju.edu)

[www.sju.edu/~rhall/Multi](http://www.sju.edu/~rhall/Multi)

## OBJECTIVES

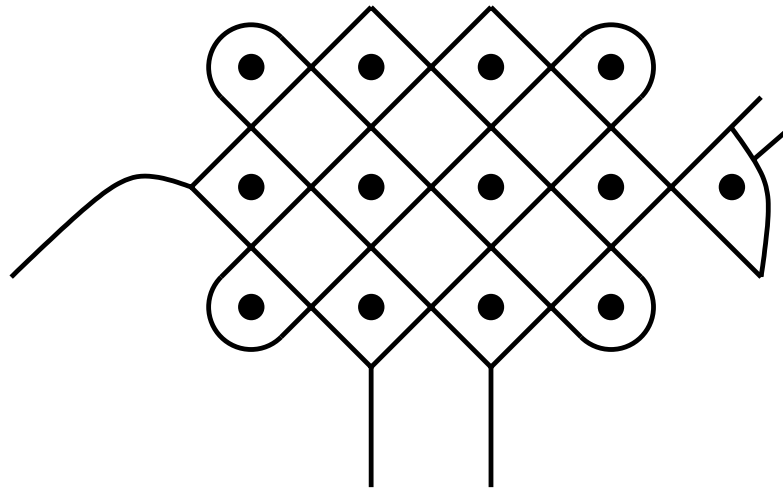
- To strengthen and expand students' understanding of fundamental mathematics through comparative study of the mathematics of world cultures.
- To understand mathematics as a universal human endeavor.
- To appreciate the contributions of all cultures to the development of mathematics.
- To explore the connections between mathematics, art, and music.
- To increase diversity in mathematics enrollment and course offerings.

# TOPICS

- Number Systems
- Arithmetic
- Fractions, Ratios, and Proportions
- Area and the Pythagorean Theorem
- Art, Music, and Mathematics
  - Sona drawings
  - Drumming

## The math of sona drawings

- Traceable graphs.
- Number theory of sona designs.



**Readings.** Gerdes, *Geometry from Africa*.

## PROJECT

**Sona for the 21st century.** Create sona drawings relevant to your own life, using traditional sona construction methods. Use them to tell a story, and discuss the mathematics you needed to draw the sona.

