



CENTERING AFRICA IN STEAM EDUCATION

Compiled in preparation for the teacher workshop held on October 16th 2021

BOOKS & ARTICLES

Gerdes, P. (2014). [Ethnomathematics and Education in Africa](#) - Open Access E-book.

Gerdes, P (1994) [On mathematics in the history of Sub-Saharan Africa 1](#). *Historia Mathematica* Volume 21, Issue 3. - Open Access Article. Also available [here](#).

[Paulus Gerdes of Mozambique - an appreciation \(Mathematicians of the African Diaspora M.A.D information page about P. Gerdes which provides an overview of his books](#)

Zaslavsky, C. (1994) [Africa Counts and ethnomathematics](#). *For the Learning of Mathematics*. 14(2). Short Open Access article.

Zaslavsky, C. (1994) *Africa Counts*

This fascinating study of mathematical thinking among sub-Saharan African peoples covers counting in words and in gestures; measuring time, distance, weight, and other quantities; manipulating money and keeping accounts; number systems; patterns in music, poetry, art, and architecture; and number magic and taboos. African games such as mankala and elaborate versions of tic-tac-toe show how complex this thinking can be. An invaluable resource for students, teachers, and others interested in African cultures and multiculturalism, this third edition is updated with an introduction covering two decades of new research in the ethnomathematics of Africa.

Zaslavsky, C. (1998). *Math games and activities from around the world*.

More than 70 math games, puzzles, and projects from all over the world are included in this delightful book for kids.

Zaslavsky, C. (2003). *More math games and activities from around the world*.

Math, history, art, and world cultures come together in this delightful book for kids, even for those who find traditional math lessons boring. More than 70 games, puzzles, and projects encourage kids to hone their math skills as they calculate, measure, and solve problems. The games span the globe, and many have been played for thousands of years, such as three-in-a-row games like Achi from Ghana or the forbidden game of Jirig from Mongolia. Also included are imaginative board games like Lambs and Tigers from India and the Little Goat Game from Sudan, or bead and string puzzles from China, and Möbius strip puzzles from Germany. Through compelling math play, children will gain confidence and have fun as they learn about the different ways people around the world measure, count, and use patterns and symmetry in their everyday lives.

Zaslavsky, C. (2019). *Number sense and nonsense*.

In this updated edition of classic a math resource, more than 80 games and activities help kids ages 8 and older go beyond just memorizing rules! They will instead learn to think critically about math and how

numbers work. Group and individual games teach fun, useful ways to manipulate odd and even numbers, prime and composite numbers, common and decimal fractions, and factors, divisors and multiples of numbers. Counting, calculating and writing numbers in languages from other cultures, such as China and Egypt, provide more understanding of basic math systems. Riddles, puzzles, number tricks and calculator games are fun ways to boost estimating and computation skills for every math student.

VIDEOS

[Emerging Superstar: Science is Cool! NextGen TV with Dr. Joy Kiano](#) a 30-minute conversation with Dr. Kiano about the first Pan-African TV station.

[NGen science videos](#) - an outstanding resources for bringing African contexts into your science classroom

▶ [Africa: The Cradle of Mathematical Sciences](#) - A lecture by Thierry Zomahoun

[Africa: The Cradle of Mathematical Sciences – 10th World Conference of Science Journalists, San Francisco 2017](#)

▶ [Documenting the History of Black Mathematicians](#) - American Mathematical Society event on October 9, 2020, Nira Chamberlain, Edray Goins, Talitha Washington, John Weaver, and Scott Williams discuss this history.

Fractal origins of Math: Dr. Ron Eglash: ▶ [African Origins of Maths Dr Ron Eglash Pt1](#)
Part 2: ▶ [African Origins of Maths Dr Ron Eglash Pt2](#)

[Gizo-Gizo at the Library of Congress](#) - meet the author of Gizo Gizo and listen to the read-aloud of this place-based education book set in the Zongo Lagoon in Ghana.

WEBSITES TO GAIN KNOWLEDGE FROM

[Mathematicians of the African Diaspora \(M.A.D.\) CONTENTS](#)

[Mathematicians of the African Diaspora presents THE ANCIENTS](#)

[Ancient African Mathematics - Ancient Math](#) - Taneter African mathematics (Ancient African History)

[Gerdes, P. New designs from Africa: Inspiration from traditional Angolan Designs](#)

[On mathematics in the history of Sub-Saharan Africa](#)

[Young STEAM Inventors](#)

[The Algebra Project](#) (Bob Moses)

ACTIVITIES & IDEAS

[Inside Teaching Africa Day](#)

Textiles & Adinkra

[including a lesson plan on Adinkra fabric dyeing](#)

Adinkra Glossary: [Adinkra Glossary](#)

[Rethinking Mathematics](#)

[The Ishango Bone: The Oldest Mathematical Artifact](#) The Mathematical Gazette. Cambridge University press. A short description of the tally marks on the Ishango Bone.