



## BRAZIL

# The Streets of Ouro Preto

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### Location

The historic city of Ouro Preto, located in the southeastern Brazilian state Minas Gerais



“If mathematics is a universal language, then, just as in English, there are accents, and different terms used or emphasized from one country to another. In Brazil, students learn to create their own mathematical poems using mathematical modeling.”

—Milton Rosa (left) and Daniel Orey (right)

## Context

**Brazil is the largest** country in South America and the fifth most densely populated country in the world, with a population of nearly 200,000,000. It is a country of rich natural environments and resources, diverse cultures, and one of the world’s fastest growing, most robust economies. Brazil will receive special attention around the world through its hosting of the World Cup in 2014 and the Summer Olympics in 2016.

Educational systems in Brazil are evolving to reflect the country’s vibrant economic and social growth. They present an effective, futuristic model for other educational systems around the world—a stark contrast to what happened from the mid-1960s to 1990 when Brazil was governed by a military political dictatorship that restricted free speech and opposing political views. Educational change is underway in Brazil, and while significant challenges remain, efforts to design a world-class educational system where all children realize their fullest potential are being implemented. One such government program applied at the national level is called *bolsa escola*. Grants are provided to economically disadvantaged parents to keep their children in schools.



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## Math Is a Verb: Activities and Lessons from Cultures Around the World

BY JIM BARTA, RON EGLASH, AND CATHY BARKLEY

**"Mathematics is a verb! In Ute we do not have one just word to describe mathematics—rather, we name it we use it. When we count, build, design, cook, hunt, or fish, we are doing mathematics."** FABIAN JENKS | a Northern Ute elder from Fort Duchesne, Utah

For most people, the word *mathematics* is a noun. But as the quote above demonstrates, for many people in different cultures, mathematics is not simply something they learn in school but something they do as an intrinsic part of their everyday lives.

*Math Is a Verb: Activities and Lessons from Cultures Around the World* is a guide for teachers who would like to enhance their mathematics instruction by integrating it with examples and activities of cultures throughout the world. The book provides culturally situated examples, each linked to Common Core objectives, that show how mathematics is so much more than a story problem or an exercise in a worksheet with little or no context. Mathematics is a process shaped and influenced by its use and by the culture of those using it. The activities demonstrate how cultures influence mathematics and, reciprocally, how mathematics affects culture.

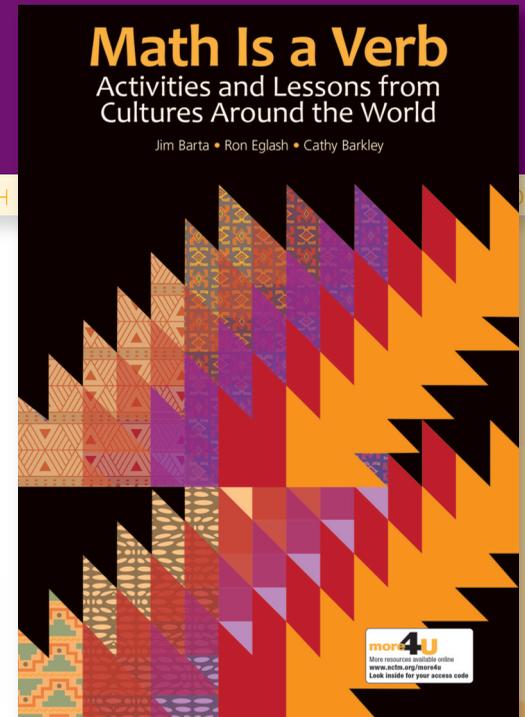
The authors provide teachers with representative mathematical examples from a variety of cultural communities throughout the world, with a particular emphasis on cultures not typically included in other multicultural mathematics books. The goal is not merely to ensure that students realize the global nature of mathematics but also, in our increasingly diverse classrooms, to cause them to be inspired when they see their own culture and mathematical heritage showcased.

**ABOUT THE AUTHORS:** **Jim Barta** is professor and dean of the College of Health Sciences and Human Ecology at Bemidji State University, MN. Throughout his career, he has been a strong advocate for providing equal access and opportunity to all learners through connections to mathematics and cultures. He has served on the boards of several national math organizations and continues to sponsor and participate in professional development for math teachers in rural communities around the world.

**Ron Eglash** is a professor of science and technology studies at Rensselaer Polytechnic Institute, with a secondary appointment in computer science. His work as a Fulbright scholar was published in the book *African Fractals: Modern Computing and Indigenous Design* and was featured in his 2007 TED talk. His "Culturally Situated Design Tools" software, offering math and computing education from indigenous and vernacular arts, is available for free at [www.csdt.rpi.edu](http://www.csdt.rpi.edu).

**Cathy Barkley** is an emeritus professor of mathematics at Colorado Mesa University, where she was a professor of mathematics and associate vice president for academic affairs for twenty-two years. She has been an educator for over forty years and has taught art, science, and mathematics to all levels of students from K–16. She continues to be actively involved in the field of mathematics education and still teaches her favorite course, "Ethnomathematics," for prospective teachers.

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## Activities and Lessons from Cultures Around the World

Jim Barta • Ron Eglash • Cathy Barkley



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