Literature Reflecting Culture

Following are examples of literatures that can be integrated in mathematics lessons to reflect culture.

- *Mathematics teachers' professional development*:
  Bresser, Melanese, & Sphar; Gear; Lassa & Paling; Leonard & Guha; Mack; Perkins & Flores; Spicer; Whiteford; and Zaslavsky's *The multicultural math classroom: Bringing in the world*

Bresser, R., Melanese, K., & Sphar, C. (2009). *Supporting English language learners in math class. Grades 3-5*. Sausalito, CA: Math Solutions.
Outlines the challenges English Language Learners (ELLs) face when learning math and provides strategies for teachers to use to help ELLs succeed in math.

Gear, A. L. (2012). A cultural introduction to math, Teaching Children Mathematics, (18)6, 354-360.

Lassa, P.N. & Paling, D. (1983). *Teaching mathematics in Nigerian primary schools.* Cambridge, UK: University Press.
Explains math concepts using manipulatives that are readily available in Nigeria. Some concepts are developed at the concrete, pictorial, and abstract levels.

Leonard, J. & Guha, S. (2002). Creating cultural relevance in teaching and learning mathematics, *Teaching Children Mathematics*, (9)2, 114-118.
Provides examples of how story problem can be created using resources in the community, e.g. elapsed time when calculating how long it is from the church's Sunday service to the church's Wednesday noonday service.

Mack, N. K. (2011). Enriching number Knowledge, *Teaching Children Mathematics*, (18)2, 100-109.
Discusses how fourth and fifth grade students represent Hindu-Arabic numbers in different number systems, e.g. Babylonian, Mayan, Roman Numerals, and Egyptian.

Perkins, I. & Flores, A. (2002). Mathematical notations and procedures of recent immigrant students, *Mathematics Teaching in the Middle School*, (7)6, 346-351.
Although the article is in the middle school journal, the cultural examples are relevant to upper elementary school, different handwriting for numerals, different symbols for operations, e.g. division, and different algorithms, e.g. subtraction using the equal addition approach and short division.

Spicer, J. (2005).Mathematics of world cultures = A world of possibilities, *ENC 2005*. Columbus, OH: Eisenhower National Center for Mathematics and Science Education, 8-13.
Includes hints for teachers who are interested in "taking culture to the classroom." Books and websites are suggested.

Whiteford, T. (2010). Is mathematics a universal language? *Teaching Children Mathematics*, 16(5), 276-203.
Describes alternate procedures for algorithms, e.g. subtracting using equal addition and when multiplying by a 2 digit factor, multiplying by the tens first rather than the units. Includes counting in other cultures.

Zaslavsky, C. (1999). *The multicultural math classroom: Bringing in the world*. Portsmouth, NH: Heinemann.
Defines multicultural mathematics and the multicultural mathematics classroom. Includes math concepts (e.g. number, geometry, measurement, and data analysis) and games from various cultures.

- *Mathematics, culture, and other areas of the curriculum*:
    Irons; and *WorldScapes.*

Irons, C., Burnett, J., Foon, S. W. H., & Vanderee, D. (2000). *Mathematics from many cultures.* London: Kingscourt Publishing.
*Includes mathematics from Asia, Africa, Middle East, Europe, Oceania, and North America. A big picture book to use for class discussion and an accompanying Teachers' Notes with lessons and Blackline Masters. This book is one in the series, **Growing with Math,** published by McGraw Hill for K-5.*
https://www.mheonline.com/program/view/5/4/307/007GWM/313/0076036847/

WorldScapes. (2008). *A cross-cultural literacy resource. Grades 3-8.* Vernon Hills, IL: ETA hand2mind.
Include literature to integrate in the classroom. Not all of the literature in WorldScapes focuses on mathematics content.

- *Emphasis on culture*:
Altman & Sanchez; Chinn; Dooley's series; Simakoff; and Williams.

Altman, L. J. & Sanchez, E. O. (1993). *Amelia's Road.* NY: Lee & Low Books, Inc.

Chinn, K. (1995). *Sam and the lucky money.* NY: Lee & Low Books.

Dooley, N. (1996). *Everybody bakes bread.* Minneapolis, MN: Lerner Publishing Group, Inc.
A rainy-day errand introduces Carrie to many different kinds of bread, including chapatis, challah, and papusas. Includes recipes.

Dooley, N. (2002). *Everybody brings noodles.* Minneapolis, MN: Lerner Publishing Group, Inc.
The block party was Carrie's idea, but when it arrives she can only think about two things: the talent show and the delicious noodle dishes from many countries that her neighbors are bringing.

Dooley, N. (2001). *Everybody cooks rice.* Boston, MA: Houghton Mifflin Company.
Carrie is sent to find her younger brother at dinnertime and is introduced to a variety of cultures through encountering the many different ways rice is prepared at the different households visited. Recipes are included.

Dooley, N. (2000). *Everybody serves soup.* Minneapolis, MN : Carolrhoda Books.
While trying to earn money by shoveling snow so she can buy her mother a Christmas present, Carrie comes up with an idea for just the right gift. Includes soup recipes.

Simakoff, N. (1993). Islamic designs in color. NY: Dover Publications, Inc.

Williams, K. L. (1990). *Galimoto.* NY: William Morrow & Company, Inc.
Kondi is determined to make a galimoto – a toy vehicle made of wires. His brother laughs aty the idea, but all day Kondi goes about gathering up the wire he needs. By hnightfall, his wonderful galimoto I ready for the village children to play with in the light of the moon.

- *Counting: History and number bases other than 10*:
    Adler; and Schmandt-Besserat

Adler, D. A. (1975). *Base five.* NY: Thomas Y. Crowell Company.
Explains in simple terms the principles of a base five number system using coins, checkers, and other common objects.

Schmandt-Besserat, D. (1999). *The history of counting.* NY: Morrow Junior Books.

Explains numberless counting systems of simple societies, how past cultures adapted and changed earlier counting systems to meet their needs, and how the current decimal system evolved.

- *Counting in other countries/languages*:
   Cooper; Evans; Feelings; Haskins series; Haskins & Benson's series; Helton & Micklo; Krebs & Cairns; and Zaslavsky's *Count on your fingers African style*.

Cooper, D. (1994). *My Bermuda 1, 2, 3*. Toronto, Canada: Boulton, Howard & King Associates.

Evans, L. (1999). *Can you count ten toes? Count to 10 in 10 different languages*. NY: Houghton Mifflin Co.

Feelings, M. (1971). *Moja means one: Swahili counting book*. NY: Dial Books for Young Readers.

Haskins, J. (2006). *Count your way through Africa*. Minneapolis, MN: Millbrook Press.

Haskins, J. (1987). *Count your way through China*. Minneapolis, MN: Millbrook Press.

Haskins, J. (1996). *Count your way through Mexico*. Minneapolis, MN: Carolrhoda Books, Inc.

Haskins, J. & Benson, K. (1996). *Count your way through France*. Minneapolis, MN: Carolrhoda Books, Inc.

Haskins, J. & Benson, K. (1996). *Count your way through Greece*. Minneapolis, MN: Carolrhoda Books, Inc.

Haskins, J. & Benson, K. (2007). *Count your way through Kenya*. Minneapolis, MN: Millbrook Press.

Helton, S. M. & Micklo, S. J. 1997. Elementary Math Teacher's BOOK OF LISTS. West Nyack, NY: The Center for Applied Research in Education.
   List 55 includes counting to 10 in 12 languages other than English.

Krebs, L. & Cairns, J. (2003). *We all went on safari: A counting journey through Tanzania*. Cambridge, MA: Barefoot Books.

Zaslavsky, C. (1999). *Count on your fingers African style*. Hong Kong: Writers and Readers Publishing, Inc.