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Olson, Harry F. *Music, Physics, and Engineering.* Mineola, NY: Dover Publications, 1967.

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Reading List for Teachers

Burns, Marilyn. *Lessons for Multiplying and Dividing Fractions: Grades 5-6 (Teaching Arithmetic).* Sausalito, CA: Math Solutions Publishing, 2003.

Collins, Kathleen. *Music Math: Exploring Different Interpretations of Fractions*. New York, NY: The Rosen Publishing Group, 2004.

McCullen, Chris. *Radial Fractions Math Workbook (Multiplication and Division): A Fun and Creative Visual Strategy to Practice Multiplying and Dividing Fractions.* New York, NY: CreateSpace Independent Publishing, 2010.

Surmani, Andrew. *Alfred's Essentials of Music Theory.* Van Nuys, CA: Alfred Publishing Company, 1999.

Wright, David. *Mathematics and Music.* Providence, RI: American Mathematical Society, 2009.

Reading List for Scholars

Calvert, Pam. *The Multiplying Menace: The Revenge of Rumpelstiltskin (A Math Adventure).* Watertown, MA: Charlesbridge Publishing, 2006.

Calvert, Pam. *The Multiplying Menace Divides (A Math Adventure).* Watertown, MA: Charlesbridge Publishing, 2011.

Complete Color-Coded Flashcards for All Beginning Music Students. Van Nuys, CA: Alfred Publishing, 1996.

Dodds, Dayle Ann. *Full House: An Invitation to Fractions.* Somerville, MA: Candlewick Publishing, 2009.

Lee, Jared D. *Funny and Fabulous Fraction Stories: 30 Reproducible Math Tales and Problems to Reinforce Important Fraction Skills.* New York, NY: Scholastic Teaching Resources, 1999.

Classroom Materials

Art Supplies
Attachments 1-9
Music (online radio sites)
Musical Instruments (optional)
Netbooks (or computer lab access)
Sheet Music
TI-73 Calculators

Appendix: Implementing District Standards

Scholars will apply and extend previous understandings of multiplication and division to divide fractions by fractions.

6. NS1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*

Synopsis

This unit is designed to help scholars learn the process for multiplying and dividing fractions. This unit was created for use in an honors level sixth grade mathematics course, but can be modified and taught to grade levels five through seven. The unit begins with an introduction of the multiplication and division of fractions, and how music theory can be integrated into math. Scholars will have opportunities to complete literacy tasks such as choice boards and jigsaws, explore the science behind the sound of music, engage in the musical mathematical chairs kinesthetic activity, and complete artistic designs by creating a dancing musical note foldable. Music will be used throughout activities as a behavior management and time keeping strategy.

This unit is aligned with the North Carolina Common Core State Standards in fifth and sixth grades.