

## LEARNING DECIMALS AND FRACTIONS WITH A 19TH-CENTURY CURRENCY TABLE

**Grades:** 4-5

**Subjects:** Math (4-5), Social Studies (4)

### PRIMARY SOURCE USED

**Title:** “The American school-master's assistant : being a compendious system of vulgar and decimal arithmetic; containing: the usual methods of calculation of federal money dispersed throughout the whole, and adapted to the use of shools[sic] in the United States.”

**Link:** [http://memory.loc.gov/cgi-bin/query/r?ammem/fawbib:@field\(DOCID+@lit\(cbc0011\)\)](http://memory.loc.gov/cgi-bin/query/r?ammem/fawbib:@field(DOCID+@lit(cbc0011)))

#### INSTRUCTIONS

1. Click on “View Page Images”
2. Locate the blank box beside “Turn to image”
3. Type in the following numbers, separately: 8, 54, 55, 56
4. For each of the four images, click on the image for a larger, downloadable jpeg

#### ABBREVIATIONS KEY

- d. penny (British)
- s. shilling (British)
- L. (or *l.*) pound (British)
- dwt. pennyweight (measures precious metal)
- gr. grain (measures precious metal)
- \$ dollar (of course!)
- c. cent

### IMPORTANT INFORMATION

Currency that was not in dollars was counted in pounds (as in England today). The symbol for a pound is “*l.*” (lowercase) or “*L.*” (uppercase). Just as dollars are divided into quarters, pennies, and other units, pounds are also divided into smaller units. See the equations at the top of image 8 for these smaller 1811 units.

Also, in 1811, the amount 4.44 was written “4,44” (with a comma used instead of a period). A pound (also called “pound sterling”) was worth 4 dollars and 44 cents. “Sterling” refers to currency in pounds.

## ACTIVITY #1

### FIND:

On image 8 you'll find "A TABLE of the Weight and Value of Coins, as they pass in the respective States of the Union."

### DISCUSS:

- Which of the coins listed here have you heard of?
- Which coin was worth the most? Which was worth the least?
- In what U.S. states was the dollar worth the most? In which was it worth the least?
- What was the difference (in pounds, shillings, and pence) between a dollar in Georgia and a dollar in Tennessee? How much does that come to in dollars and cents?

## ACTIVITY #2

### FIND:

On image 54 you'll find "A TABLE Exhibiting rules for exchanging Federal and Sterling money; and the currencies of the several United States into each other."

This primary source shows you how to convert units of money from one state to another, and how to convert from Federal money (dollars and cents) into Sterling (British pounds, shillings, and pence).

### DISCUSS:

- Try converting different amounts of Tennessee money into the currencies of the other U.S. states. Use both fractions and decimals to express amounts.
- Try answering the 13 sample questions on image #'s 55 and 56. (The answers are provided.)



## WHAT DOES THIS MEAN FOR US TODAY?

Today, a dollar is worth the same whether you're in Tennessee, Georgia, or any other state in the U.S. However, a pound sterling is not worth \$4.44 today. Find a modern-day conversion table like the one at <http://www.currency-conversion.info>. Try converting 1 U.S. dollar into British pounds, and comparing this exchange rate to the one in the primary source from 1811. What's the difference?

Do the same conversion on other currency converters, such as <http://www.oanda.com>, <http://www.gocurrency.com>, or <http://www.xe.com>. Are the rates the same according to different currency converters?

Check back in one week and convert 1 U.S. dollar into pounds again. Are dollars worth more or fewer pounds than last week? Keep checking once a week to see how currency rates are still changing today.

## CURRICULUM STANDARDS

**Grade 5 Math:** [http://www.state.tn.us/education/ci/math/2009\\_10/grade\\_5.pdf](http://www.state.tn.us/education/ci/math/2009_10/grade_5.pdf)

- SPI 0506.1.2: Estimate fraction and decimal sums or differences.
- SPI 0506.1.3: Recognize the unit associated with the remainder in a division problem or the meaning of the fractional part of a whole given in either decimal or fraction form.
- SPI 0506.2.1: Read and write numbers from millions to millionths in various contexts.
- SPI 0506.2.3: Select a reasonable solution to a real-world division problem in which the remainder must be considered.
- SPI 0506.2.4: Solve problems involving the division of two- and three-digit whole numbers by one- and two-digit whole numbers.
- SPI 0506.2.5: Solve addition and subtraction problems involving both fractions and decimals.
- SPI 0506.2.6: Add and subtract proper and improper fractions as well as mixed numbers.
- SPI 0506.2.7: Recognize equivalent representations for the same number.
- SPI 0506.2.8: Write terminating decimals in the form of fractions or mixed numbers.
- SPI 0506.2.9: Compare whole numbers, decimals, and fractions using the symbols  $<$ ,  $>$ , and  $=$ .

**Grade 4 Math:** [http://www.state.tn.us/education/ci/math/2009\\_10/grade\\_4.pdf](http://www.state.tn.us/education/ci/math/2009_10/grade_4.pdf)

- SPI 0406.1.3: Determine the correct change from a transaction.
- SPI 0406.2.7: Convert improper fractions into mixed numbers and/or decimals.
- SPI 0406.2.8: Add and subtract proper fractions with like and unlike denominators and simplify the answer.
- SPI 0406.2.9: Add and subtract decimals through hundredths.
- SPI 0406.2.10: Solve contextual problems using whole numbers, fractions, and decimals.
- SPI 0406.2.11: Solve problems using whole number multi-digit multiplication.
- SPI 0406.2.12: Solve problems using whole number division with one- or two-digit divisors.

**Grade 4 Social Studies:** [http://www.state.tn.us/education/ci/ss/grade\\_4.shtml](http://www.state.tn.us/education/ci/ss/grade_4.shtml)

- Economics Learning Expectations 4.2.02c: Explain the economic patterns of early European colonial governments and their relationships with foreign governments.
- Economics 4.2.spi.4: Recognize the difference between a barter system and a money system.
- History 4.5.spi.7: Determine why the United States Constitution was necessary (i.e., no single currency, no judicial branch, no enforcement of laws, small and large states having unequal representation).