Lesson Plan: Math with Money

Objective:

Students learn about the currency of the 1700s.

Outcomes: Students will…

- Handle reproduction coins and bills, and discuss them with classmates

- Learn about the complications of a non-base-ten monetary system

- Work out math problems involving the currency system of the 1700s

Common Core Standards Addressed:

<u>4th Grade Standards</u>

Mathematics → Measurement & Data

- CCSS.Math.Content.4.MD.A2
  Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Mathematics → Operations & Algebraic Thinking

- CCSS.Math.Content.4.OA.A.2
  Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

- CCSS.Math.Content.4.OA.A.3
  Solve multistep word problems posed with whole numbers and having

DARMUSEUM

(202) 879-3241 ✯ museum@dar.org ✯ www.dar.org/museum
This program is made possible by the generous contributions of NSDAR donors.

whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Mathematics → Number & Operations: Fractions

- CCSS.Math.Content.4.NF.A.2
  Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

- CCSS.Math.Content.4.NF.B.3.a
  Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

- CCSS.Math.Content.4.NF.B.4.c
  Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

5th Grade Standards

Mathematics → Measurement & Data

- CCSS.Math.Content.5.MD.A1
  Convert among different standard measurement units within a given measurement system, and use these conversions in solving multi-step, real world problems.

DARMUSEUM

(202) 879-3241 ✶ museum@dar.org ✶ www.dar.org/museum
This program is made possible by the generous contributions of NSDAR donors.

Mathematics → Operations & Algebraic Thinking

- CCSS.Math.Content.5.OA.A.2

  Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them. (*For example, express the calculation "add 8 and 7 then multiply by 2" as 2x (8+7)*)

Mathematics → Number & Operations: Fractions

- CCSS.Math.Content.5.NF.A.1
  Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

- CCSS.Math.Content.5.NF.B.6
  Solve real world problems involving multiplication of fractions and mixed numbers by using visual fraction models or equations to represent the problem.

Items Used:

- Reproduction coins and paper bills
- Math problems and answer key (on disk)

Preparation

- Print the math problems for each student. Read over the problems to ensure they are all appropriate for your students.

Lesson:

Part 1, Experiencing 18th Century Money

1. Pass around the reproduction coins and bills. Depending on the size of your class, you may want to divide the students up into smaller groups.

DARMUSEUM

(202) 879-3241 ✶ museum@dar.org ✶ www.dar.org/museum
This program is made possible by the generous contributions of NSDAR donors.

2. Start a discussion about the money. Here are some suggestions:

   a. What are the similarities and differences between this money and our money today?

   b. Why does it come from so many different countries and states? *(England did not allow the American colonies to mint their own coins, so the coins had to come from other countries, especially England and Spain but also France, Germany, and others. Each colony separately printed its own money, but it was not worth as much as the coins. The Virginia halfpenny was minted in England specifically for use in America.)*

   c. What would be some of the challenges with using money that came from many different places?

   d. Why are most of the coins round, but some are triangles? *(The Spanish dollar, also called a piece of eight, was often cut in half, quarters, or eight pieces to make change!)*

   e. Which do you think was worth more, the copper, silver, or gold coins? How do you know? Is that like our money is now?

   f. The copper coin is a halfpenny, and there was even a copper coin called a farthing, which was worth a quarter of a penny! Why do you think they needed those coins? Would we have a use for those denominations now? *(In case you were wondering, there was a penny coin, and it was silver.)*

   g. Who are the people on the English coins (halfpenny, shilling, guinea)? *(King George II and King George III, though the names are in Latin: Georgius, with the u sometimes written as a v. Rex means king, probably most recognizably in Tyrannosaurus Rex.)*

      i. Why are they not on the Spanish coins? *(He was king of England; Spain had a different king.)*

      ii. Who are the people on our modern coins? Why do you think we put people on coins?

Part 2, Math

Give students the math problems to solve. You may need to instruct them to skip certain problems if you determine they do not fit the students' current math skills.