

Lesson Plan: Arithmetic & Spelling

Objective:

Using slates to complete their work, students discover that students of the 18th century also had to learn math skills, particularly those that related to their future employment.

Outcomes: Students will...

- Use old-fashioned tools to write with: slates and slate pencils
- Do arithmetic problems based on 18th century trades
- Spell words from an 18th century school book

Common Core Standards Addressed:

4th Grade Standards:

Mathematics → Numbers & Operations

- 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 $\frac{1}{2}$. 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
- CCSS.Math.Content.4.NBT.B.5
Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Mathematics → Geometry, Measurements, & Algebraic Thinking

- CCSS.Math.Content.4.G.A.2
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size.



- CCSS.Math.Content.4.MD.A.2

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 measurement quantities 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.

- CCSS.Math.Content.4.OA.A.3

Solve multistep word problems posed with whole numbers and having 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.

English Language Arts → Language

- CCSS.ELA-Literacy.L.4.2d

Spell grade appropriate words correctly, consulting references as needed

5th Grade Standards:

Mathematics → Numbers & Operations

- CCSS.Math.Content.5.NF.A.1

Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fraction in such a way as to produce an equivalent sum or difference of fractions with like denominators.

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

Solve word problems involving addition and subtraction of fractions referring to the whole, including cases of unlike denominators e.g. by using visual fraction models or equation to represent the problem. Use benchmark



fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers

- CCSS.Math.Content.5.NF.B.3

Interpret a fraction as division of the numerator by the denominator. Solve word problem involving division of whole numbers leading to answer in the form of fractions or mixed numbers.

Mathematics → Algebraic Thinking & Geometry

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

Write simple expressions that record calculations with numbers, and interpret numerical expression without evaluating them.

- CCSS.Math.Content.5.G.B.3

Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles so all squares have four right angles.

- CCSS.Math.Content.5.G.B.4

Classify two-dimensional figures in a hierarchy based on properties.

English Language Arts → Language

- CCSS.ELA-Literacy.L.5.2e

Spell grade appropriate words correctly, consulting references as needed



Items Used:

- Slates
- Slate pencils
- Arithmetic problems (on disk)
- Spelling words (on disk)

Lesson:Part 1, Arithmetic

Students use the slates and slate pencils to work on the arithmetic problems from the PDF file “Arithmetic Problems” (on disk). Because only a certain amount of writing will fit on the slate, you may wish to have the students all do the problems one by one, sharing the answer after each problem.

Part 2, Spelling

1. Choose from the list of spelling words from a 1700s book, PDF file “Spelling Words” (on disk).
2. Read each word aloud, and have students write the word on their slates. Select or allow a student to volunteer to stand and read the spelling of the word aloud.

