

# 4<sup>th</sup> Grade Math Unit 1

<b>Content Area</b>	Math
<b>Unit Title/Topic</b>	Number and Operations in Base Ten - Fractions
<b>Course/Grade Level</b>	4 <sup>th</sup> Grade
<b>Unit Summary</b>	Students focus on reading and identifying the parts of a fraction.
<b>Time Frame</b>	weeks

## Desired Results

### Priority Standards:

- **CCSS.Math.Content.4.NF.A.1** Explain why a fraction  $a/b$  is equivalent to a fraction  $(n \times a)/(n \times b)$  by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
- **CCSS.Math.Content.4.NF.C.7** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual model.

### Supporting Standards:

- **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** Understand a fraction  $a/b$  with  $a > 1$  as a sum of fractions  $1/b$ .
  - **CCSS.Math.Content.4.NF.B.3a** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
  - **CCSS.Math.Content.4.NF.B.3b** Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:*  $3/8 = 1/8 + 1/8 + 1/8$ ;  $3/8 = 1/8 + 2/8$ ;  $2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$ .
  - **CCSS.Math.Content.4.NF.B.3c** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
  - **CCSS.Math.Content.4.NF.B.3d** Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

- **CCSS.Math.Content.4.NF.B.4** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
  - **CCSS.Math.Content.4.NF.B.4a** Understand a fraction  $a/b$  as a multiple of  $1/b$ . *For example, use a visual fraction model to represent  $5/4$  as the product  $5 \times (1/4)$ , recording the conclusion by the equation  $5/4 = 5 \times (1/4)$ .*
  - **CCSS.Math.Content.4.NF.B.4b** Understand a multiple of  $a/b$  as a multiple of  $1/b$ , and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express  $3 \times (2/5)$  as  $6 \times (1/5)$ , recognizing this product as  $6/5$ . (In general,  $n \times (a/b) = (n \times a)/b$ .)*
  - **CCSS.Math.Content.4.NF.B.4c** 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. *For example, if each person at a party will eat  $3/8$  of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*
- **CCSS.Math.Content.4.NF.C.5** Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.<sup>2</sup> *For example, express  $3/10$  as  $30/100$ , and add  $3/10 + 4/100 = 34/100$ .*
- **CCSS.Math.Content.4.NF.C.6** Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite  $0.62$  as  $62/100$ ; describe a length as  $0.62$  meters; locate  $0.62$  on a number line diagram.*

## Continuous Foundational Standards:

## Nebraska State Standard

- MA 4.1.1.b Demonstrate multiple equivalent representations for decimal numbers through the hundredths place (e.g., 2 and 5 hundredths is 2.05; 6.23 is  $6 + .2 + .03$ )
- MA 4.1.1.h Locate fractions on a number line
- MA 4.1.3.b Add and subtract decimals to the hundredths place (e.g., money)