

## **Unit 4: Understanding Fractions**

Unit #:	APSDO-00017503	Duration:	18.0 Day(s)	Date(s):	12-12-2016			
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Unit Focus								
In this unit, students become immersed in fractions. Students will understand that fractions are numbers that are parts of a whole, and be able to relate a fraction to a visual representation. They will be able to relate that understanding to the concept that the size of the fractional part is relative to the whole. Students will be able to transfer this understanding to expressing fractions as fair sharing, parts of a whole, and parts of a set. They will use their knowledge of fractions to partition a number line into equal parts. The students will also be able to explain equivalence and be able to compare fractions by reasoning about their size. Primary instructional materials for this unit include On Core and Everyday Mathematics.								
Es	tablished Goals	Transfer						
Common Core Mathematics: 3 • Represent a fraction 1/b on a number line diagram by defining the interval		<ul> <li>T1 (T10) Describe, classify, and compare objects/numbers and sets of objects/numbers.</li> <li>T2 (T13) Move from one representation to another without changing the quantity.</li> <li>T3 (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense.</li> </ul>						
from 0 to	to 1 as the whole and partitioning o equal parts. Recognize that each s size 1/b and that the endpoint part based at 0 locates the r 1/b on the number line. <i>IATH.CONTENT.3.NF.A.2A</i> tand a fraction 1/b as the quantity by 1 part when a whole is	Meaning						
part has of the pa		U	Inderstandings	Esse	ential Questions			
number : CCSS.MA • Understa formed b		<b>U1</b> (U103) Th represented i <b>U2</b> (U106) A l used to repre	e same value can be n multiple ways. limited set of symbols can be sent numerical descriptions and	<b>Q1</b> (Q100) How object/number <b>Q2</b> (Q103) Wh number/relation	v do I describe this or set of objects/numbers? at is the value of this onship and how can I represent			

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<ul> <li>partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. <i>CCSS.MATH.CONTENT.3.NF.A.1</i></li> <li>Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. <i>CCSS.MATH.CONTENT.3.NF.A.3A</i></li> </ul>	relationships. <b>U3</b> (U104) Mathematics is a universal language that uses assumed and logical statements to describe the world. <b>U4</b> (U512) Mathematicians use diagrams, symbols, and terms to describe problems or situations	it in different ways? <b>Q3</b> (Q501) What do I picture/visualize when I look at this problem? <b>Q4</b> (Q550) Did I use clear language (symbols, labels, terms, units of measure and significant digits) to explain my reasoning to others?		
• Recognize and generate simple equivalent fractions e.g. $1/2 = 2/4$ 4/6	Acquisition of Knowledge and Skill			
= $2/3$ . Explain why the fractions are	Knowledge	Skills		
equivalent, e.g., by using a visual fraction model.		S1		
<ul> <li>CCSS.MATH.CONTENT.3.NF.A.3B</li> <li>Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its</li> </ul>		Identify a fraction written in terms of a/b (numerator/denominator) and be able to relate that same fraction to a visual representation (part of shape or set)		
endpoint locates the number a/b on the number line.		S2		
<ul> <li>CCSS.MATH.CONTENT.3.NF.A.2B</li> <li>Express whole numbers as fractions, and</li> </ul>		Express fractions as fair sharing, parts of a whole, and parts of a set		
whole numbers. Examples: Express 3 in		S3		
the form $3 = 3/1$ ; recognize that $6/1 = 6$ ; locate $4/4$ and 1 at the same point of a number line diagram. <i>CCSS.MATH.CONTENT.3.NF.A.3C</i>		Transfer their understanding of parts of a whole to partition a number line into equal parts.		
<ul> <li>Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole.</li> </ul>		a. On a number line from 0 to 1, students can partition (divide) it into equal parts and recognize that each segmented part represents the same length		
Record the results of comparisons with the symbols $>$ , =, or $<$ , and justify the conclusions, e.g., by using a visual		b. Students label each fractional part based on how far it is from zero to the endpoint		
fraction model.		S4		
<ul> <li>CCSS.MATH.CONTENT.3.NF.A.3D</li> <li>Attend to precision. CCSS.MATH.MP.6</li> <li>Make sense of problems and persevere in solving them. CCSS.MATH.MP.1</li> <li>Reason abstractly and quantitatively.</li> </ul>		Explain equivalence in in special cases, and compare fractions by reasoning about their size		

CCSS.MATH.MP.2	S5
	Recognize and generate simple equivalent fractions using models (i.e $\frac{1}{2}=2/4$ )
	S6
	Relate fractions and whole numbers by expressing whole numbers as fractions (i.e $1=3/3$ and $2=6/3$ )
	S7
	Compare two fractions with the same numerator or the same denominator. Record the results of comparisons <,> or =, and justify the conclusions i.e,. by using visual fraction model
	S8
	Understand two fractions as equivalent if they are the same size or the same point in a number line
	S9
	Express the numerator of a fraction as the count of the number of equal parts ( i.e. <sup>3</sup> / <sub>4</sub> means that there are 3 one-fourths, students can count <i>one fourth, two fourths, three fourths)</i>
	S10
	Understand when a whole is cut into equal parts, the denominator represents the number of equal parts
	S11
	Understand the size of the fractional part is relative to the whole. (i.e. The number of

	children in one-half of a classroom is different than the number of children in one-half of a school. The whole in each set is different therefore the half in each set will be different)
	S12
	Recognize as the number of equal pieces in the whole increases, the size of the fractional pieces decreases
	S13
	Understand the number of equal parts tell how many make a whole
	S14
	Understand fractional parts must be equal-