Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 3* / Grade 3 (Math Regional Curriculum)

Wednesday, September 26, 2012, 2:53PM

Standard/Module: Proficiency in fractions 3.NF.3 (Week 24, 8 Weeks)

Stage 1: Desired Results

Standards Focus

- Major (70%) connects with 3.NF.1-2, 3.G.2, 3.MD.4

Grade 3 Proficiency Maps.pdf

Standards

NYS: CCLS:Mathematics, NYS: 3rd Grade , Number & Operations—Fractions

3.NF Develop understanding of fractions as numbers.

- 3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
- 3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- 3b. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- 3c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
- 3d. 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. Record the results of comparisons with the symbols >, =, or

Enduring Understandings	Essential Questions
1. Recognize fractions can be equivalent even with different numerators and/or denominators.	1. What does it mean when you have equivalent fractions?
2. Multiple fractions can fall on the same point on a number line, which makes them equivalent.	2. How do you create equivalent fractions?
3. Equivalent fractions can be represented many ways, but all equivalent fractions represent the same size or quantity and would be the same point on the number line.	3. How do you determine the larger or smaller fraction when numerators are the same?
	4. How do you determine the larger or smaller fraction when the denominators are the same?
4. Equivalent fractions can be created by using the identity property where you multiply the numerator and denominator by 1 in the form of b/b.	5. What do the symbols <, >, =, represent and why would you use them?

5. All whole numbers can be represented as a fraction by placing the whole number over 1. 6. Any number divided by itself is equal to 1. 7. <,>, and = can be used to compare quantities, including fractions. 8. When comparing fractions with the same numerator (referring to the same whole), the fraction with the smaller denominator will always be larger. 9. When comparing fractions with the same denominator(referring to the same whole), the fraction with larger numerator will always be the greater quantity. 10. Whole numbers can be expressed as a fraction.	

Critical Content

1. <u>Equivalence of fractions</u>

    a. Definition of equivalence(same size)

    b. Location of equivalent fractions

    c. Identity Property

    d. Creation of equivalent fractions

<u>2.Whole numbers vs. Fractions</u>

a. What's the difference?

b. Write whole numbers as equivalent fractions and fractions of the form b/b as equivalent whole numbers.

c. Locate on number line to verify equivalence.

3.Comparing fractions referring to the same whole

a. Meaning of: <, >, =

b. Compare two fractions with the same numerator

c. Compare two fractions with the same denominator

d. Use symbols to compare fractions.

Skills	**Vocabulary**
1. Students will be able to explain why fractions are equivalent. 2. Students will be able to locate fractions on the number line and verify if fractions are equivalent or not. 3. Students will be able to create equivalent fractions by using the identity property. 4. Students will be able to use visual fraction models to show equivalence of fractions. 5. Students will be able to write whole numbers as fractions as well as write a fraction of the form b/b as 1. 6. Students will be able to compare two fractions (using <, >, or =) with the same numerator or same denominator and realize that comparisons can only be made when the same whole is being referred to.	Tier 2: Equal, compare, point, same size, part, whole, less than, greater than Tier 3:Fractions, Equivalent, Numerator, Denominator, Identity Property, Number Line, Whole Numbers, DO NOT USE THE WORD "Reduced" WITH STUDENTS. This sets up a misconception that one fraction is less than another, when the reality is they are making equivalent fractions. Use "simplify" or "equivalent fractions."

Stage 2: Assessment Evidence

Assessments

Performance: Skill Demonstration

Pre-Assessment: Students will be asked 5 questions dealing with equivalent fractions (are fractions

equivalent and why, create equivalent fractions, write an equivalent fraction for a whole number, given a fraction like 10/10, write an equivalent whole number) and then 5 questions dealing with ordering and comparing fractions with the same numerator or same denominator (part of the question would include explaining why they compared the fractions the way they did.)

Post-Assessment: Students will be asked 5 questions dealing with equivalent fractions (are fractions equivalent and why, create equivalent fractions, write an equivalent fraction for a whole number, given a fraction like 10/10, write an equivalent whole number) and then 5 questions dealing with ordering and comparing fractions with the same numerator or same denominator (part of the question would include explaining why they compared the fractions the way they did.)

The assessments (pre- and post-) will be identical except for the numbers used in the problems to ensure validity.

Stage 3: Learning Plan

Learning Activities	Resources
1. DO NOT USE THE WORD "Reduced" WITH STUDENTS. This sets up a misconception that one fraction is less than another, when the reality is they are making equivalent fractions. Use "simplify" or "equivalent fractions." 2. Use pattern blocks to review equivalency. 3. Reinforce equivalency with other manipulatives. 4. Use number line to locate fractions and to check for equivalency. 5. Use identity property to find equivalent fractions. Ask students the reason why when we use the identity property we change the form of a fraction and not it's value. 6. Review what whole numbers are and challenge students to write whole numbers as fractions. 7. Use whole numbers to make sure students understand how to use <,>, and = and then extend the use of these symbols with fractions that have the same numerator or denominator. Be sure to use visual models to help with the conceptual understanding.	www.illustrativemathematics.org http://illuminations.nctm.org/ http://www.p12.nysed.gov/apda/common-core-sample-questions/ http://www.k-5mathteachingresources.com/3rd-grade-number-activities.html enVision Math Program Investigations Mathematics Program Everyday Math Program

Differentiation Opportunities

Provide students with multiple manipulatives and representations of equivalency.

<< Previous Year

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