UNIT 3

<table>
<tr><td colspan="2">Title: Number and Operations

Topic: Addition/Subtraction of Fractions</td><td>Subject/Course: Math

Grade: 6</td><td>Length:

Designer: Davis/Boyd</td></tr>
<tr><td colspan="4">UNIT GOALS AND EXPECTATIONS</td></tr>
<tr><td colspan="2">IMPORTANT CONCEPTS/UNDERSTANDINGS:
• Powers and roots are related
• Successful problem solvers posses a set of core beliefs that support their work: problem solving I important, take significant time and repeated efforts, and requires reflection.
• Computational estimation produces approximate results.</td><td colspan="2">ESSENTIAL QUESTIONS:
• How are powers and roots related?
• What are the specific strategies that have wide application in attacking problems and can help in problem solving?
• What is the purpose of estimating and what determines a reasonable estimation for a given situation?</td></tr>
<tr><td colspan="2">STUDENT LEARNING EXPECTATIONS:
NO.3.6.2 – Develop and analyze algorithms for computing with fractions(including mixed numbers) and demonstrate with and without appropriate technology computational fluency in their use and justify the solution</td><td colspan="2">NO.3.6.4 – Estimate reasonable solutions to problem situations involving fractions
NO.3.6.3 – Solve, with and without appropriate technology, multi-step problems using a variety of methods and tools</td></tr>
<tr><td colspan="2">SPECIFIC DECLARATIVE KNOWLEDGE – What I know

o Essential Vocabulary: square root symbol, square root, perfect square, perfect square root, mixed number
o Identify perfect squares
o Identify perfect square roots
o Recognize benchmark fractions
o Identify sequence of operations' needed to solve problems
o Identify method/strategy or tool required to solve problem</td><td colspan="2">SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do

o Compute with all operations using fractions (including mixed numbers and unlike denominators)
o Justify solution with computational fluency
o Round benchmark fractions to nearest whole number
o Estimate calculations using addition and subtraction of fractions.
o Check appropriate solution
o Solve multi step problems with and without appropriate technology</td></tr>
<tr><td colspan="4">UNIT ASSESSMENTS
(Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)</td></tr>
<tr><td colspan="4">Unit 3 Open Response
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<tr><td colspan="2">Traditional Assessments:
o TLI Module 3 Assessment
o TLI Module 3 Open Response
o Unit 2 Assessment
o Vocabulary Quiz</td><td colspan="2">Other Evidence of Learning:
o Homework
o Classwork
o Warm-up Problems</td></tr>
</table>

o Unit 3 Quizzes	

ACTIVITIES AND LEARNING EXPERIENCES	Resources
Identify perfect square and perfect square roots **o** S will earn vocabulary using the 4 step vocabulary process(square root symbol, square root, perfect square, perfect square root) **o** Warm-up problem: Solve exponents that have the power of 2. Design chart relating exponents with the power of 2 (numbers 1-10) **o** S will make square arrays with given sides. S will explore the relationship between square numbers and exponents. **o** S will use square arrays to explore and discover the concept of square roots.	Text Book 264-265 Square tiles
Estimate solutions to situations involving fractions. **o** Warm-up problem **o** S and T will review vocabulary(benchmark fraction). **o** Review "benchmark fractions" **o** S will use a number line to round fractions to nearest whole number or ½. **o** T will model procedure of comparing numerator to denominator to round fractions to nearest whole number or ½.	
Add and Subtract fractions with and without common denominators **o** Warm-up problem: Find common denominator of two fractions **o** S will review vocabulary(denominator, numerator) **o** S will write steps for adding and subtracting fractions with like denominators. **o** T and S will review adding/subtracting fractions with common denominators.	Text book pages 204-205 Fraction Bars
o T will model adding/subtracting fractions without common denominators **o** S will practice adding and subtracting fractions by using smartboard activity	http://nlvm.usu.edu/ Text Book Pg. 206-209
Add and Subtract mixed numbers with and without common denominators **o** Warm-up problem **o** S will review vocabulary(mixed number) **o** T will use faction bars to model procedure **o** T will model adding and subtracting mixed numbers **o** S will solve addition and subtractions problems.	Text Book Pg. 210-213
Solve problems involving adding and subtracting fractions and mixed numbers with and without common denominators. **o** S will be given real world problems to solve. **o** S. will identify strategy or method to use in solving problem. **o** S will identify sequence of operations needed in order to solve problem.	

Career Connections
Chef, taxi driver, truck driver, carpenter