

Grade: 4

Module: 3

Title: “Mixing It Up”

Date: 2013-2014

DRAFT

Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

Module Title: "Mixing It Up"

Conceptual Lens: Relationships

Fractions (F)

- Addition
- Subtraction
- Multiplication
- Numerator
- Denominator
- Mixed Numbers
- Improper Fractions
- Unit Fractions
- Multiples
- Word Problems
- Measurement

Measurement (M)

- Metric
 - Kilometer
 - Meter
 - Centimeter
 - Kilogram
 - Liter
 - Milliliter
- Standard
 - Feet
 - Inch
 - Yard
 - Pound
 - Ounce
- Time
 - Hour
 - Minute
 - Second
- Conversions (within systems)
- Perimeter
- Area

Unit Title:

"Mixing It Up"

Representations (R)

- Concrete
- Pictorial
- Equations

Data (D)

- Line Plot

Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

Module Title: “Mixing It Up”

Conceptual Lens: Relationships

Module Overview

In Module 3, the children will decompose fractions and mixed numbers into sum of whole numbers and/or fractions with the same denominator in numerous ways. This will help build the foundation for adding and subtracting fractions and mixed numbers with like denominators. Students will also be introduced to multiplying fractions by whole numbers, by applying prior knowledge of multiplication, equivalent fractions, and improper fractions. Emphasis will be on problem solving situations that involve critical thinking skills, as opposed to simple procedures. From there, the children will explore aspects of perimeter and area, units of measurement and relationships among them. They will convert units of measurement within the same system and to solve word problems. Lastly, students will create and interpret data in line plots that are displayed in fractional units.

Technology Integration

Teachers should be proficient utilizing interactive white boards, technology, and internet resources, such as Think Central, and other websites that provide interactive math tools. Teachers should also demonstrate knowledge of administering online testing, interpreting data, and selecting computer-based activities for students.

Standards For Mathematical Content Addressed in this unit:

New	4.NF.3	4.NF.4		
	4.MD.1	4.MD.2	4.MD.3	4.MD.4

Standards for Mathematical Practice addressed in this unit:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

Module Title: “Mixing It Up”

<i>Generalizations (G)</i>	<i>Guiding Questions</i> (F = Factual; C = Conceptual; P = Philosophical)
<p>1. Fractions having the same denominator can be composed by joining and decomposed by separating. (F, R)</p>	<ul style="list-style-type: none"> a. Why do you only break apart the numerator when you decompose fractions with the same denominator? (C) b. How is decomposing fractions both similar and different from decomposing whole numbers? (C) c. How can you add and subtract fractions of a given set? (F) d. What happens to the denominator when you add fractions with like denominators? (F) e. Why is it important to identify, label, and compare fractions as representations of equal parts of a whole or of a set? (C)
<p>2. Addition and subtraction of mixed numbers requires the use of properties of operations. (F, R)</p>	<ul style="list-style-type: none"> a. What are mixed numbers and how are they represented? (F) b. How can improper fractions and mixed numbers be used interchangeably? (F) c. How can you add and subtract mixed numbers of a given set? (F) d. How can equivalent fractions be identified? (F) e. How do you apply your understanding of mixed numbers in everyday life? (P)
<p>3. Multiplying a fraction by a whole number creates either a fractional or whole number product that is a multiple of the given fraction. (F, R)</p>	<ul style="list-style-type: none"> a. How is multiplication of fractions similar to division of whole numbers? (C) b. How is multiplication of fractions similar to repeated addition of fractions? (C) c. How do you multiply a set by a fraction? (F) d. What did you notice when you multiplied a whole number by a fraction? (C) e. How is multiplying a whole number by a fraction different than multiplying a whole number by another whole number? (C)

Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

<i>Generalizations (G)</i>	<i>Guiding Questions</i> (F = Factual; C = Conceptual; P = Philosophical)
<p>4. Measurement systems contain varying sized units where the larger units are multiples of the smaller units. (M, R)</p>	<ol style="list-style-type: none"> a. What is a unit of measurement? (F) b. How are units in the same system of measurement related? (C) c. What units are appropriate to measure distances, weight, and volume? (C) d. What are some situations when you would need to measure distances, weights, and volumes? (C) e. How can you estimate and measure distances, weights, and volumes? (C) f. What operation(s) are used to convert units of measurement? (F) g. What patterns do you notice in the conversion tables? (C)
<p>5. Mathematical operations are used to find the perimeter and area of shapes. (M, R)</p>	<ol style="list-style-type: none"> a. How can patterns be used to find standard formulas for perimeter and area? (C) b. How are perimeter and area related? How are they different? (C) c. What strategies can be used to find area and perimeter of a shape or a region? (C) d. How could two different shapes have the same area (or the same perimeter)? (C) e. What are some real-life situations that involve finding perimeter (and area)? (C) f. How does the area change as the rectangle's dimensions change (with a fixed perimeter)? (C)
<p>6. Data can be represented on line plots in units of whole numbers or fractions. (D, R)</p>	<ol style="list-style-type: none"> a. How can you construct a line plot to display data? (C) b. What are some types of data that can be displayed in line plots? (C) c. Why did you choose a line plot to display your data? (F) d. In addition to a line plot, what are other ways in which the data could have been collected? (F) e. What are some conclusions that you can draw from the line plot? (C)
<p>7. Word problems contain information that directs you to a problem solving plan. (F, M, D, R)</p>	<ol style="list-style-type: none"> a. What is the problem asking you to do? (C) b. How can you use the situation in a word problem to determine the best operation to use? (C) c. How can you use the information in a word problem to determine how many steps you will need to solve it? (C) d. How is an unknown represented in an equation? (F) e. How can you determine what is unknown in a multistep word problem? (C) f. How can you make an equation with an unknown when you have a multistep word problem? (C)

Source: Adapted from Erickson, 2008.

<i>Critical Content What Students Will Know</i>	<i>Key Skills What Students Will Be Able to Do</i>
<p>Fractions</p> <ul style="list-style-type: none"> • Add and subtract fractions with like denominators. • Add and subtract mixed numbers with like denominators. • Multiply fractions by whole numbers. • Decompose a fraction into a sum of fractions with the same • Use given information and strategies to solve real-life word problems, involving addition and subtraction of fractions with like denominators. <p>Measurement</p> <ul style="list-style-type: none"> • Express measurements in a larger unit in terms of a smaller unit. • Convert units of measurement within the same system. • Use the formulas for perimeter and area to solve real-life word problems. • Use given information and strategies to solve real-life word problems, involving units of measurement and conversions. <p>Data</p> <ul style="list-style-type: none"> • Create a line plot to display a data set of measurements in fractions of a unit. • Use given information and strategies to solve real-life word problems, involving data displayed in line plots in fractions of a unit. 	<p>4.NF.3 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. 3</p> <ol style="list-style-type: none"> a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. <i>Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</i> c. 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. d. 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. <p>4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <ol style="list-style-type: none"> a. 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 $5/4 = 5 \times (1/4)$. b. 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 $6/5$. c. 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. <p>4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft. is 12 times as long as 1 in. Express the length of a 4 ft. snake as 48 in.</p> <p>4.MD.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 measurements 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.</p> <p>4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</p> <p>4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p>

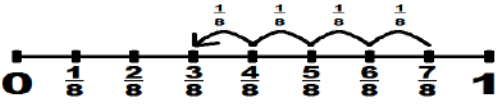
Source: Adapted from Erickson, 2008.

Waterbury Public Schools
 Mathematics Concept-Based Curriculum
 Grade 4 - Module 3
 2013-2014

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Spiral throughout this module.	<p>Model the process of solving word problems involving fractions. (Generalization 7) (4.NF.3, 4.NF.4, 4.MD.2, 4.MD.3)</p> <p>Review George Polya’s Problem-Solving Method:</p> <ol style="list-style-type: none"> 1. Understand the problem. 2. Devise a plan. 3. Carry out the plan. 4. Look back and evaluate the answer. <p>**All learning experiences allow for student discourse.</p>	<p>Acuity District Pre-Assessment</p> <p>Required Performance Task Feed The Dog (End of Module)</p> <p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions</u>[®] Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p>	<p><u>Math Expressions</u>[®] Units 2 and 11: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p><u>Hands-On Standards</u>[®], Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p>

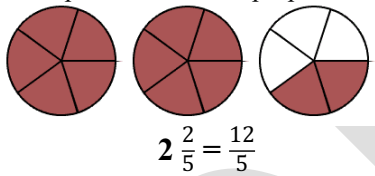
Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K–12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 1-5	<p>Add and subtract fractions with like denominators. Begin with concrete models (fraction towers, fraction tiles), then move to pictorial representations (virtual manipulatives, fraction bars), and finally to abstract. (Generalization 1,7) (4.NF.3)</p> <p>Decompose fractions into a sum of fractions with the same denominator in more than one way.</p> <p>Use fraction towers and pattern blocks to add and subtract fractions with like denominators. Include examples, such as $7/8 + 3/8 = \underline{\quad}$ and ask the students to explain why the answer would either be more or less than a whole.</p> <p>Add and subtract fractions with like denominators using number lines.</p> <div style="text-align: center;"> $\frac{7}{8} - \frac{4}{8} = \frac{3}{8}$  </div> <p>Have students write three addition or subtraction equations using fractions on a piece of paper. Two of the equations should be correct and the third should be incorrect. Have the students trade papers with a partner and ask each student to find the incorrect equation, explain why it's incorrect, and provide the correct answer.</p> <p>Provide students opportunities to draw pictures and write equations (with unknown variables) when solving word problems with fractions.</p> <p>**All learning experiences allow for student discourse.</p>	<p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions®</u> Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p>	<p><u>Math Expressions®</u> Unit 9: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Decomposing Fractions Adding and Subtracting Fractions</p> <p><u>Math Expressions®</u></p> <ul style="list-style-type: none"> • Unit 9 <p><u>Hands-On Standards®</u>, Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p> <p><u>Supplemental Lessons</u> Pizza Party Rolling Fractions Sweet Fraction Bars</p>


Source: Adapted from Erickson, 2008.

Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.


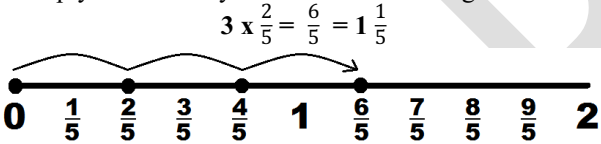
Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 6-11	<p>Convert improper fractions to mixed numbers and vice-versa. Begin with concrete models (fraction towers, fraction tiles), then move to pictorial representations (number lines, fraction bars), and finally to abstract. (Generalizations 2,7) (4.NF.3)</p> <p>Decompose mixed numbers into a sum of whole numbers and fractions with the same denominators</p> $2\frac{2}{5} = 1 + 1 + \frac{2}{5} = \frac{5}{5} + \frac{5}{5} + \frac{2}{5} = \frac{12}{5}$ <p>Use fraction tiles to divide shapes into equal pieces and then count those pieces to form improper fractions.</p>  $2\frac{2}{5} = \frac{12}{5}$ <p>Plot improper fractions and mixed numbers on an open number line.</p> <p>Provide students opportunities to explain why a given improper fraction and mixed number are equal.</p> <p>Provide students opportunities to draw pictures and write equations (with unknown variables) when solving word problems with mixed numbers.</p> <p>**All learning experiences allow for student discourse.</p>	<p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions</u>[®] Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p>	<p><u>Math Expressions</u>[®] Unit 9: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Improper Fractions and Mixed Numbers</p> <p><u>Math Expressions</u>[®]</p> <ul style="list-style-type: none"> • Unit 9 <p><u>Hands-On Standards</u>[®], Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p>

Source: Adapted from Erickson, 2008.

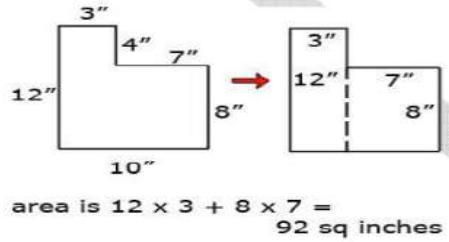
Retrieved from the companion website for *Designing a Concept-Based Curriculum for English Language Arts: Meeting the Common Core With Intellectual Integrity, K-12* by Lois A. Lanning. Thousand Oaks, CA: Corwin, www.corwin.com. Copyright © 2013 by Corwin. All rights reserved. Reproduction authorized only for the local school site or nonprofit organization that has purchased this book.

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 12-18	<p>Add and subtract mixed numbers with like denominators. Begin with concrete models (fraction towers, fraction tiles), then move to pictorial representations (number lines, fraction bars), and finally to abstract. (Generalizations 2,7) (4.NF.3)</p> <p>Decompose mixed numbers into a sum of whole numbers and fractions with the same denominators.</p> $2\frac{2}{5} = 1 + 1 + \frac{2}{5} = \frac{5}{5} + \frac{5}{5} + \frac{2}{5} = \frac{12}{5}$ <p>Use models and drawings to add and subtract mixed numbers with like denominators.</p> $3\frac{1}{4} - 1\frac{3}{4} = n$  <p>Use pattern blocks to add and subtract mixed numbers with like denominators. Ask the students to explain why the answer would either be more or less than a whole.</p> $2\frac{3}{6} + 1\frac{4}{6} = \underline{\hspace{2cm}}$ <p>Give the students an addition or subtraction equation with mixed numbers and have them predict the answer. Using think-pair-share, have students describe why their predictions are correct. Have students draw pictures of the models and record the sum. Make connections between the models and the numbers.</p> $5\frac{4}{6} - \frac{3}{6} = \underline{\hspace{2cm}}$ <p>Provide students opportunities to draw pictures and write equations (with unknown variables) when solving word problems with mixed numbers.</p> <p>**All learning experiences allow for student discourse.</p>	<p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions®</u> Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p>	<p><u>Math Expressions®</u> Unit 9: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Adding and Subtracting Mixed Numbers</p> <p><u>Math Expressions®</u></p> <ul style="list-style-type: none"> • Unit 9 <p><u>Hands-On Standards®</u>, Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p>

Source: Adapted from Erickson, 2008.

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 19-25	<p>Multiply a fraction by a whole number. Begin with concrete models (fraction towers, fraction tiles), then move to pictorial representations (number lines, fraction bars), and finally to abstract. (Generalizations 3,7) (4.NF.3)</p> <p>Model multiplication of a fraction by a whole number as a repeated addition equation.</p> <p>$4 \times \frac{1}{3} = n$ is 4 groups of $\frac{1}{3}$ or $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{4}{3} = 1\frac{1}{3}$</p> <p>Multiply a fraction by a whole number using the area model.</p> <p>$\frac{1}{4} \times 6 = n$ </p> <p>Multiply a fraction by a whole number using number lines.</p> <p>$3 \times \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$</p>  <p>Provide students opportunities to discuss why answers to multiplying a fraction by a whole number are reasonable. For example, “Between what two whole numbers does your answer lie? How do you know? Does this answer make sense? How do you know it is going to be less than a certain number?”</p> <p>Provide students opportunities to draw pictures and write equations (with unknown variables) when solving word problems with fractions.</p> <p>**All learning experiences allow for student discourse.</p>	<p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions®</u> Formative Assessment: <i>On-Going Assessments Quick Quizzes Unit Tests</i></p>	<p><u>Math Expressions®</u> Unit 9: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Multiplying a Whole Number By A Fraction</p> <p><u>Math Expressions®</u></p> <ul style="list-style-type: none"> • Unit 9 <p><u>Hands-On Standards®</u>, Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p> <p><u>Supplemental Lessons</u></p> <p>Fraction Farm</p> <p>A Bowl of Beans</p> <p>Area Models</p>

Source: Adapted from Erickson, 2008.

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 26-30	<p>Solve real-life situations that involve perimeter and area of rectangles. Begin with concrete models (color tiles, geoboards), move to pictorial representations (drawings, virtual manipulatives), and to abstract. (Generalizations 5,7) (4.MD.3) (3.MD.7)</p> <p>Model how to find the missing side of a rectangle if given the perimeter and area and the length or width of a side. Include fractions and mixed numbers with like denominators for perimeter problems.</p> <p><u>Example</u> Dr. Marzano’s garden is 270 square feet. The length of the garden is 18 feet. What is the width of the garden? What is the perimeter of the garden? Draw a picture, write an equation, and show how you solved the problem.</p> <p>Model how to find the perimeter of any regular or irregular polygon and the area of a rectilinear polygon. Include fractions and mixed numbers with like denominators for perimeter problems.</p>  <p>area is $12 \times 3 + 8 \times 7 = 92$ sq inches</p> <p>Provide students with a perimeter equation and an area equation and ask students to create a two-step word problem that corresponds with each.</p> <p>**All learning experiences allow for student discourse.</p>	<p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions®</u> Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p>	<p><u>Math Expressions®</u> Units 2, 6, and 12: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Perimeter and Area</p> <p><u>Math Expressions®</u> Unit 2 Lessons 4-6</p> <p><u>Hands-On Standards®</u>, Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p>

Source: Adapted from Erickson, 2008.

Suggested Timeline	Learning Experiences	Assessments	Differentiation (For Support and Extension)	Resources
Days 31-37	<p>Express measurements in a larger unit in terms of a smaller unit. Begin with concrete models (Cuisenaire Rods®, base-ten rods, clocks), move to pictorial representations (virtual manipulatives), and to abstract. (Generalizations 4,7) (4.MD.1, 4.MD.3)</p> <p>Explore everyday examples of customary and metric units.</p> <p>Create conversion tables for units of measurement (i.e. feet to inches, hours to minutes, etc.).</p> <p>Provide students opportunities to measure the lengths of solids, masses of solids, and volumes of liquids and express the measurements in a larger unit in terms of a smaller unit (i.e. 1,000 milliliters = 1liter). **All learning experiences allow for student discourse.</p>	<p>Acuity District Post Assessment</p> <p>Teacher Observations</p> <p>Teacher Created Common Formative Assessments</p> <p><u>Math Expressions®</u> Formative Assessment: <i>On-Going Assessments</i> <i>Quick Quizzes</i> <i>Unit Tests</i></p> <p>Required Performance Task Feed The Dog (End of Module)</p>	<p>Math Expressions® Units 2, 6, and 12: Refer to <i>Differentiated Instruction</i> pages in T.E. or on ThinkCentral.</p> <ul style="list-style-type: none"> • Intervention Cards • Challenge Cards <p>Intervention: <i>Online Soar to Success</i></p> <p>Extension: <i>Online Destination Math</i></p>	<p>Grade 4 Unpacked Standards</p> <p>ThinkCentral</p> <p>LearnZillion Video Lessons: Measurement Line Plots</p> <p><u>Math Expressions®</u></p> <ul style="list-style-type: none"> • Unit 2 • Unit 6 • Unit 12 <p><u>Hands-On Standards®</u>, Common Core Edition, Grade 4. ETA hand2mind, © 2012.</p>
Days 38-42	<p>Create and interpret a line plot that displays a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Begin with concrete models, then move to pictorial representations, and finally to abstract. (Generalizations 6,7) (4.MD.4)</p> <p>Provide students a bag of objects to measure to the nearest 1/8 of an inch. Record the results in a data table and display it in a line plot.</p> <p>Provide students with some data that could be graphed using a line plot. Have students create a line plot using that data and write three questions about the graph.</p> <p>Provide students with a perimeter equation and an area equation and ask students to create a two-step word problem that corresponds with each.</p> <p>**All learning experiences allow for student discourse.</p>			<p><u>Supplemental Lessons</u> What's The Story? Too Heavy? Too Light?</p>

Source: Adapted from Erickson, 2008.

