Name _____   Date _____

1. Draw a number bond and write the number sentence to match each tape diagram. The first one is done for you.

a.

$$1 = \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$$

b.

c.

d.

e.

f.

g.

h.

2. Draw and label tape diagrams to model each decomposition.

   a. $1 = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$

   b. $\frac{4}{5} = \frac{1}{5} + \frac{2}{5} + \frac{1}{5}$

   c. $\frac{7}{8} = \frac{3}{8} + \frac{3}{8} + \frac{1}{8}$

   d. $\frac{11}{8} = \frac{7}{8} + \frac{1}{8} + \frac{3}{8}$

   e. $\frac{12}{10} = \frac{6}{10} + \frac{4}{10} + \frac{2}{10}$

   f. $\frac{15}{12} = \frac{8}{12} + \frac{3}{12} + \frac{4}{12}$

   g. $1\frac{2}{3} = 1 + \frac{2}{3}$

   h. $1\frac{5}{8} = 1 + \frac{1}{8} + \frac{1}{8} + \frac{3}{8}$

Name _____   Date _____

1. Step 1: Draw and shade a tape diagram of the given fraction.

    Step 2: Record the decomposition as a sum of unit fractions.

    Step 3: Record the decomposition of the fraction two more ways.

    (The first one has been done for you.)

a. $\dfrac{5}{8}$

$$\dfrac{5}{8} = \dfrac{1}{8} + \dfrac{1}{8} + \dfrac{1}{8} + \dfrac{1}{8} + \dfrac{1}{8} \qquad \dfrac{5}{8} = \dfrac{2}{8} + \dfrac{2}{8} + \dfrac{1}{8} \qquad \dfrac{5}{8} = \dfrac{2}{8} + \dfrac{1}{8} + \dfrac{1}{8} + \dfrac{1}{8}$$

b. $\dfrac{9}{10}$

c. $\dfrac{3}{2}$

COMMON CORE

Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.
Date: 10/20/14

engage^ny

5.A.22

2. Step 1: Draw and shade a tape diagram of the given fraction.

   Step 2: Record the decomposition of the fraction in three different ways using number sentences.

   a. $\dfrac{7}{8}$

   b. $\dfrac{5}{3}$

   c. $\dfrac{7}{5}$

   d. $1\dfrac{1}{3}$
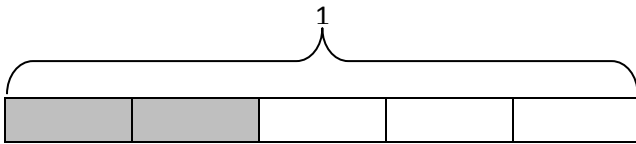
Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.

Date: 10/20/14

engage^ny 5.A.23

Name _____   Date _____

1. Decompose each fraction modeled by a tape diagram as a sum of unit fractions. Write the equivalent multiplication sentence. The first one has been done for you.

a.

$\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ $\frac{3}{4} = 3 \times \frac{1}{4}$
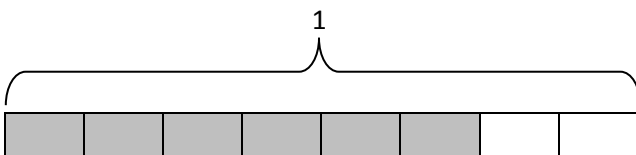
b.
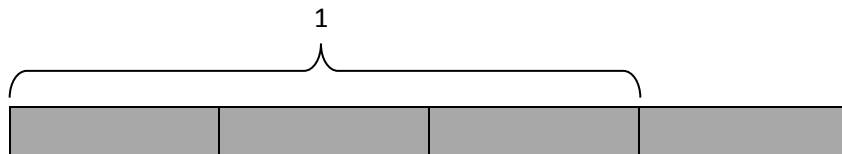
c.

d.

e.

Lesson 3:   Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams.

Date: 10/20/14

engage^{ny}

5.A.33

2. Write the following fractions greater than 1 as the sum of two products.

a.

1

b.

1
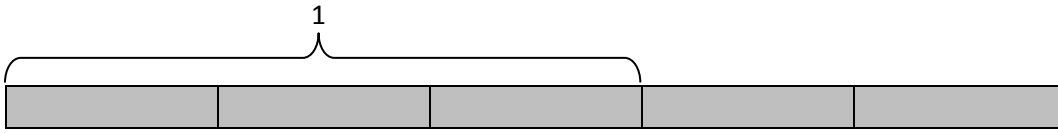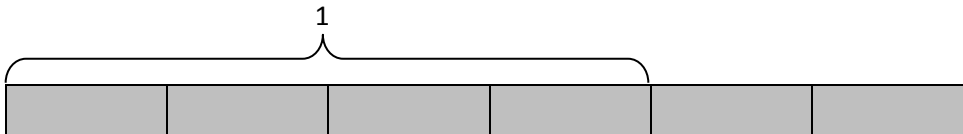
3. Draw a tape diagram and record the given fraction's decomposition into unit fractions as a multiplication sentence.

a. $\frac{4}{5}$

b. $\frac{5}{8}$

c. $\frac{7}{9}$

d. $\frac{7}{4}$

e. $\frac{7}{6}$

Lesson 3:   Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams.

Date: 10/20/14

engage^{ny}   **5.A.34**

Name _____   Date _____

1. The total length of each tape diagram represents 1. Decompose the shaded unit fractions as the sum of smaller unit fractions in at least two different ways. The first one has been done for you.

   a.

   $\frac{1}{2}$

   $\frac{1}{2} = \frac{1}{4} + \frac{1}{4}$

   $\frac{1}{2}$

   $\frac{1}{2} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

   b.

   $\frac{1}{3}$

   $\frac{1}{3}$

   c.

   d.

2. The total length of each tape diagram represents 1. Decompose the shaded fractions as the sum of smaller unit fractions in at least two different ways.

   a.

   b.

COMMON CORE

Lesson 4:   Decompose fractions into sums of smaller unit fractions using tape diagrams.
Date: 10/20/14

engage^ny   **5.A.44**
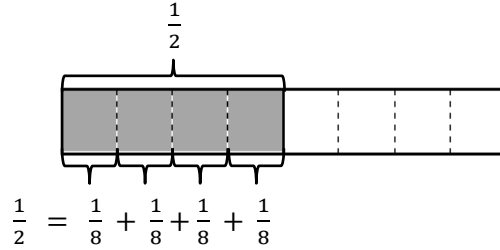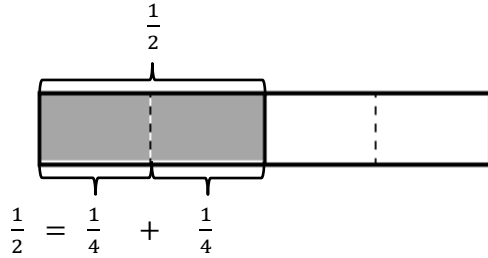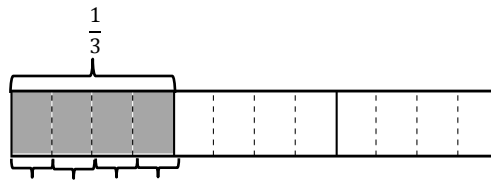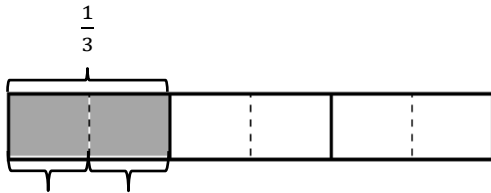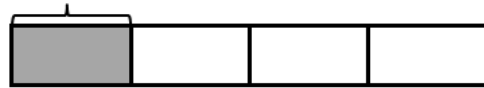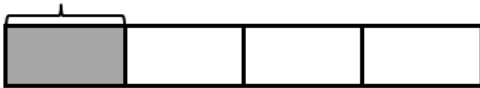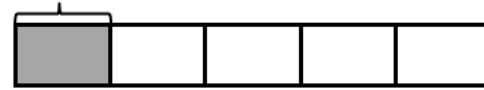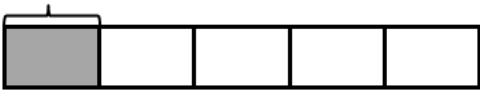
3. Draw and label tape diagrams to prove the following statements. The first one has been done for you.

a. $\frac{2}{5} = \frac{4}{10}$

$$\frac{2}{5}$$

$$\frac{4}{10}$$
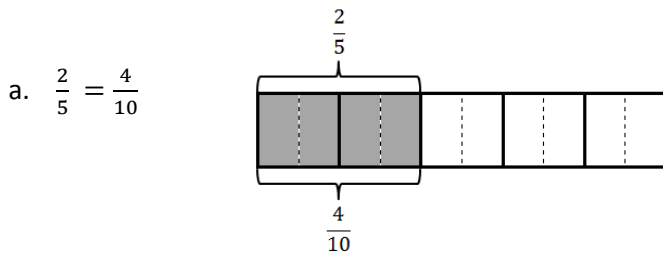
b. $\frac{2}{6} = \frac{4}{12}$

c. $\frac{3}{4} = \frac{6}{8}$

d. $\frac{3}{4} = \frac{9}{12}$

4. Show that $\frac{1}{2}$ is equivalent to $\frac{4}{8}$ using a tape diagram and a number sentence.

5. Show that $\frac{2}{3}$ is equivalent to $\frac{6}{9}$ using a tape diagram and a number sentence.

6. Show that $\frac{4}{6}$ is equivalent to $\frac{8}{12}$ using a tape diagram and a number sentence.

Name _____   Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

    a. 2 rows

    $$\frac{1}{4} = \frac{2}{}$$
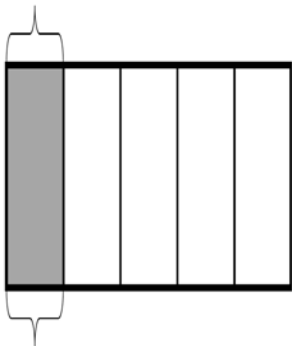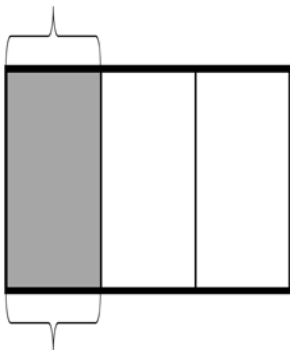
    $$\frac{1}{4} = \frac{1}{8} + \frac{}{} = \frac{}{}$$

    $$\frac{1}{4} = 2 \times \frac{}{} = \frac{}{}$$

    b. 2 rows

    c. 4 rows

Lesson 5: Decompose unit fractions using area models to show equivalence.
Date: 10/20/14

engage^ny   5.A.55

2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

   a. $\dfrac{1}{2} = \dfrac{3}{6}$ b. $\dfrac{1}{2} = \dfrac{4}{8}$

   c. $\dfrac{1}{2} = \dfrac{5}{10}$ d. $\dfrac{1}{3} = \dfrac{2}{6}$

   e. $\dfrac{1}{3} = \dfrac{4}{12}$ f. $\dfrac{1}{4} = \dfrac{3}{12}$

3. Explain why $\dfrac{1}{12} + \dfrac{1}{12} + \dfrac{1}{12}$ is the same as $\dfrac{1}{4}$.

Name _____   Date _____

1. Each rectangle represents 1. Draw horizontal lines to decompose each rectangle into the fractional units as indicated. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences. The first one has been partially done for you.

a. Sixths

$$\frac{2}{3} = \frac{4}{-}$$

$$\frac{}{3} + \frac{}{3} = \left(\frac{1}{6} + \frac{1}{6}\right) + \left(\frac{1}{6} + \frac{1}{6}\right) = \frac{4}{-}$$

$$\left(\frac{1}{6} + \frac{1}{6}\right) + \left(\frac{1}{6} + \frac{1}{6}\right) = \left(2 \times \frac{}{-}\right) + \left(2 \times \frac{}{-}\right) = \frac{4}{-}$$

$$\frac{2}{3} = 4 \times \frac{}{-} = \frac{4}{-}$$
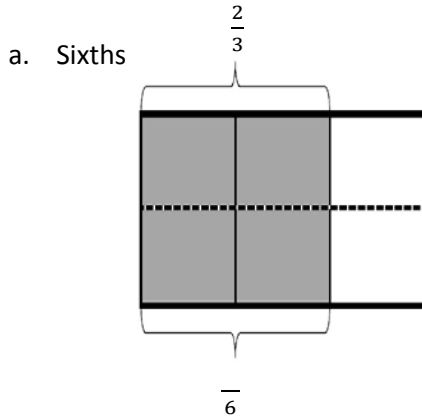
b. Tenths

c. Twelfths

2. Draw area models to show the decompositions represented by the number sentences below. Express each as a sum and product of unit fractions. Use parentheses to show the relationship between the number sentences.

a. $\frac{3}{5} = \frac{6}{10}$

b. $\frac{3}{4} = \frac{6}{8}$

3. Step 1: Draw an area model for a fraction with units of thirds, fourths, or fifths.

Step 2: Shade in more than one fractional unit.

Step 3: Partition the area model again to find an equivalent fraction.

Step 4: Write the equivalent fractions as a number sentence. (If you've written a number sentence like this one already on this Problem Set, start over.)

Name _____   Date _____

Each rectangle represents 1.

1. The shaded unit fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

b.

c.

d.

2. Decompose the shaded fractions into smaller units using the area models. Express the equivalent fractions in a number sentence using multiplication.

a.

b.

c.

d.

COMMON CORE

Lesson 7: Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}

5.B.9
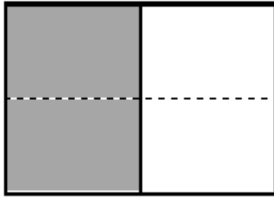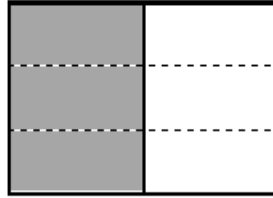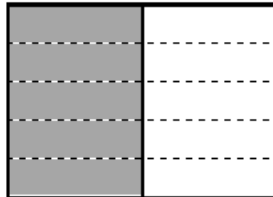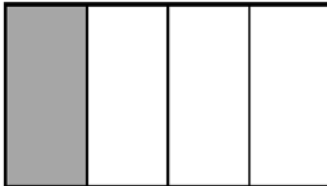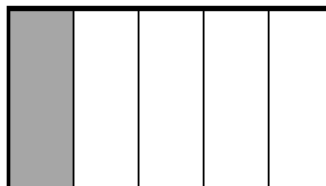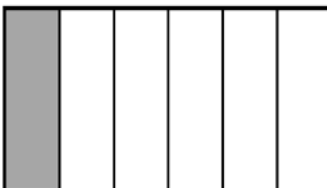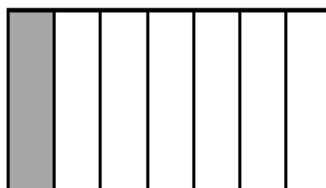
e.   What happened to the size of the fractional units when you decomposed the fraction?

f.   What happened to the total number of units in the whole when you decomposed the fraction?

3.   Draw three different area models to represent 1 third by shading.
Decompose the shaded fraction into (a) sixths, (b) ninths, and (c) twelfths.
Use multiplication to show how each fraction is equivalent to 1 third.

a.

b.

c.

Name _____   Date _____

Each rectangle represents 1.

1. The shaded fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.
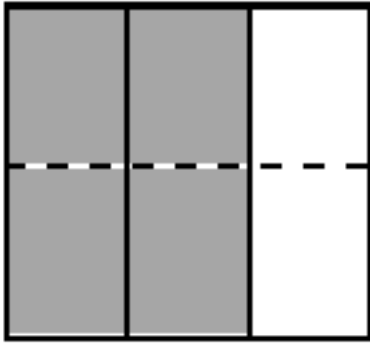
$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

b.

c.

d.
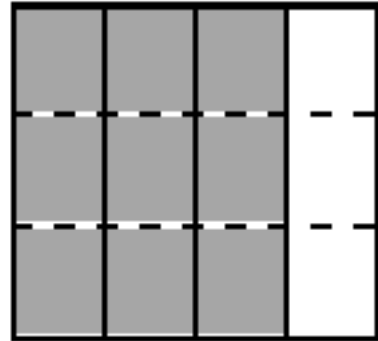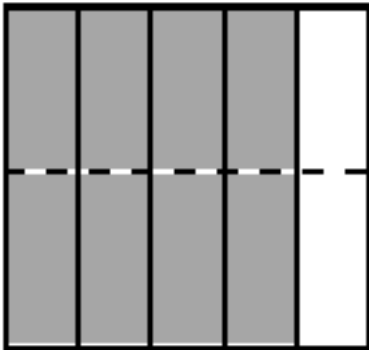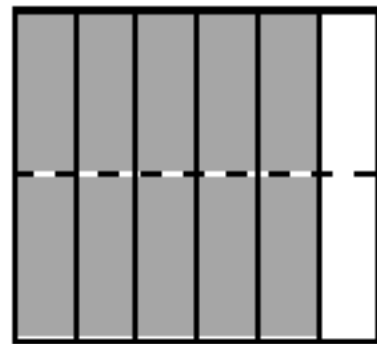
2. Decompose the shaded fractions into smaller units, as given below. Express the equivalent fractions in a number sentence using multiplication.

a. Decompose into tenths.

b. Decompose into fifteenths.

COMMON CORE

Lesson 8:	Use the area model and multiplication to show the equivalence of two fractions.
Date:	10/20/14

engage^ny   5.B.20
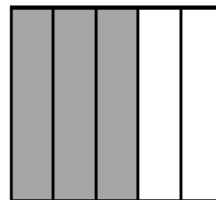
3. Draw area models to prove that the following number sentences are true.

   a. $\frac{2}{5} = \frac{4}{10}$

   b. $\frac{2}{3} = \frac{8}{12}$

   c. $\frac{3}{6} = \frac{6}{12}$

   d. $\frac{4}{6} = \frac{8}{12}$

4. Use multiplication to find an equivalent fraction for each fraction below.

   a. $\frac{3}{4}$

   b. $\frac{4}{5}$

   c. $\frac{7}{6}$

   d. $\frac{12}{7}$

5. Determine which of the following are true number sentences. Correct those that are false by changing the right-hand side of the number sentence.

   a. $\frac{4}{3} = \frac{8}{9}$

   b. $\frac{5}{4} = \frac{10}{8}$

   c. $\frac{4}{5} = \frac{12}{10}$
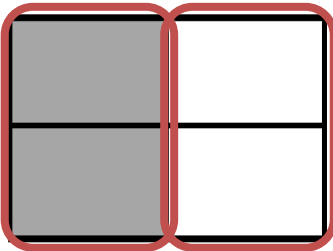
   d. $\frac{4}{6} = \frac{12}{18}$
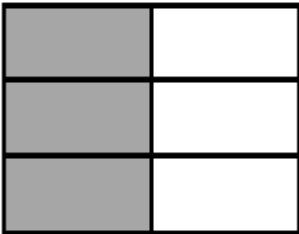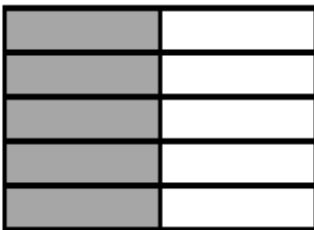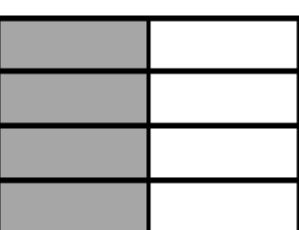
COMMON CORE

Lesson 8:   Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^ny

5.B.21

Name _____   Date _____

Each rectangle represents 1.

1. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

a.

$$\frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$$

b.

c.

d.
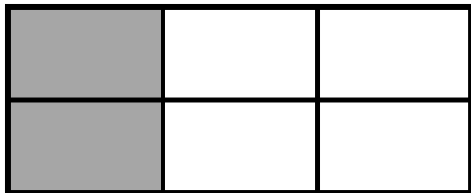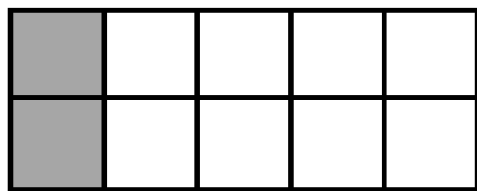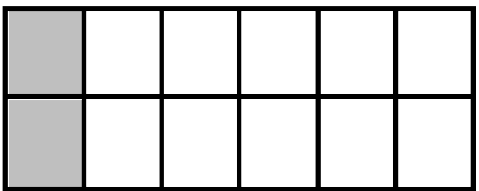
2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

a.

b.

c.

d.

e.   What happened to the size of the fractional units when you composed the fraction?

f.   What happened to the total number of units in the whole when you composed the fraction?

3. a.   In the first area model, show 2 sixths. In the second area model, show 3 ninths. Show how both fractions can be renamed as the same unit fraction.
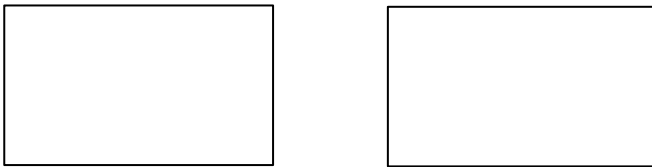
b.   Express the equivalent fractions in a number sentence using division.

4. a.   In the first area model, show 2 eighths. In the second area model, show 3 twelfths. Show how both fractions can be composed, or renamed, as the same unit fraction.
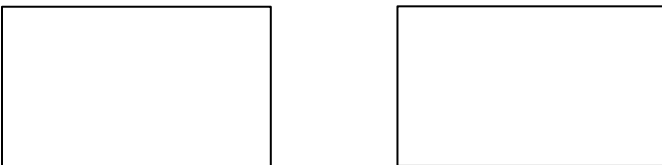
b.   Express the equivalent fractions in a number sentence using division.

COMMON CORE

Lesson 9:   Use the area model and division to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}

5.B.32

Name _____   Date _____

Each rectangle represents 1.

1. Compose the shaded fraction into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

    a.

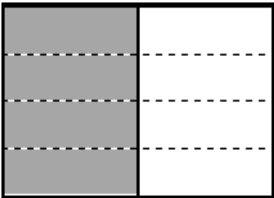 $$\frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

    b.

    c.

    d.

2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

    a.

    b.

COMMON CORE

Lesson 10: Use the area model and division to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}

5.B.43
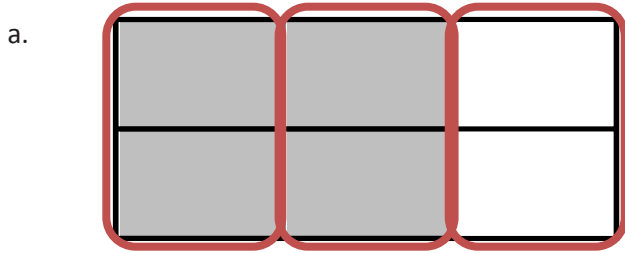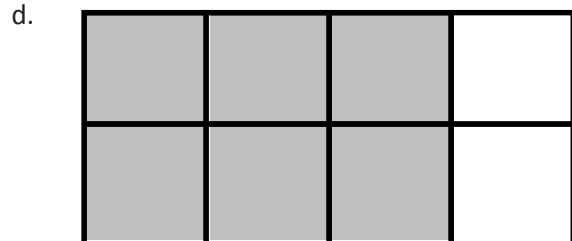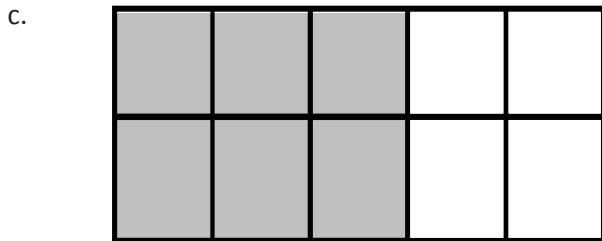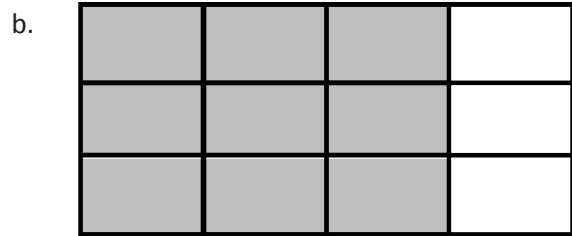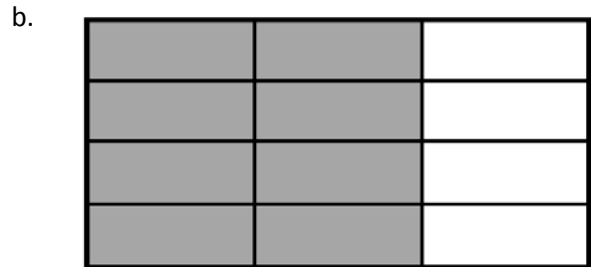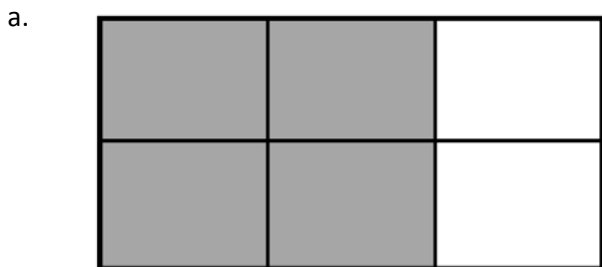
3. Draw an area model to represent each number sentence below.

a. $\dfrac{4}{10} = \dfrac{4 \div 2}{10 \div 2} = \dfrac{2}{5}$

b. $\dfrac{6}{9} = \dfrac{6 \div 3}{9 \div 3} = \dfrac{2}{3}$

4. Use division to rename each fraction given below. Draw a model if that helps you. See if you can use the largest common factor.

a. $\dfrac{4}{8}$

b. $\dfrac{12}{16}$

c. $\dfrac{12}{20}$

d. $\dfrac{16}{20}$

Name _____   Date _____

1. Label each number line with the fractions shown on the tape diagram. Circle the fraction that labels the point on the number line that also names the selected part of the tape diagram.

   a.

   b.

   c.

2. Write number sentences using multiplication to show:

   a. The fraction represented in 1(a) is equivalent to the fraction represented in 1(b).

   b. The fraction represented in 1(a) is equivalent to the fraction represented in 1(c).

COMMON CORE

Lesson 11:   Explain fraction equivalence using a tape diagram and the number line, and relate that to the use of multiplication and division.
Date: 10/20/14

engage^ny   5.B.54

3. Use each shaded tape diagram below as a ruler to draw a number line. Mark each number line with the fractional units shown on the tape diagram, and circle the fraction that labels the point on the number line that also names the selected part of the tape diagram.

a.

1

b.

1

c.

1

4. Write number sentences using division to show:

   a. The fraction represented in 3(a) is equivalent to the fraction represented in 3(b).

   b. The fraction represented in 3(a) is equivalent to the fraction represented in 3(c).

5. a. Partition a number line from 0 to 1 into fifths. Decompose $\frac{2}{5}$ into 4 equal lengths.

   b. Write a number sentence using multiplication to show what fraction represented on the number line is equivalent to $\frac{2}{5}$.

   c. Write a number sentence using division to show what fraction represented on the number line is equivalent to $\frac{2}{5}$.

COMMON CORE

Lesson 11: Explain fraction equivalence using a tape diagram and the number line, and relate that to the use of multiplication and division.

Date: 10/20/14

engage^ny

5.B.55

Name _____   Date _____

1.

a. Plot the following points on the number line without measuring.

   i. $\frac{1}{3}$ ii. $\frac{5}{6}$ iii. $\frac{7}{12}$
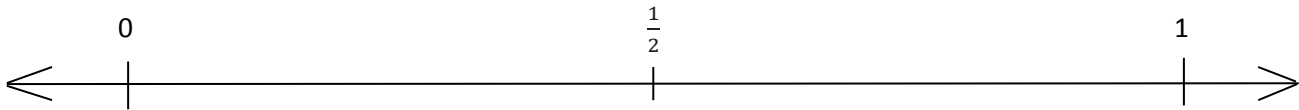
b. Use the number line in Part (a) to compare the fractions by writing >, <, or = on the lines.

   i. $\frac{7}{12}$ _____ $\frac{1}{2}$ ii. $\frac{7}{12}$ _____ $\frac{5}{6}$

2.

a. Plot the following points on the number line without measuring.

   i. $\frac{11}{12}$ ii. $\frac{1}{4}$ iii. $\frac{3}{8}$
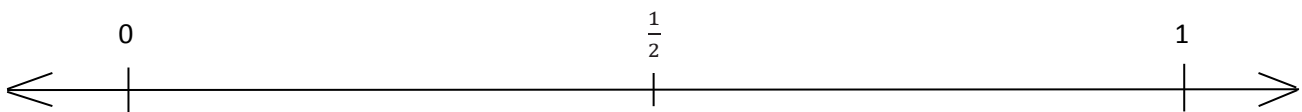
b. Select two fractions from Part (a), and use the given number line to compare them by writing >, <, or =.

c. Explain how you plotted the points in Part (a).

COMMON CORE

Lesson 12:   Reason using benchmarks to compare two fractions on the number line.

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3. Compare the fractions given below by writing > or < on the lines.

   Give a brief explanation for each answer referring to the benchmarks 0, $\frac{1}{2}$, and 1.

   a. $\frac{1}{2}$ ——————— $\frac{3}{4}$

   b. $\frac{1}{2}$ ——————— $\frac{7}{8}$

   c. $\frac{2}{3}$ ——————— $\frac{2}{5}$

   d. $\frac{9}{10}$ ——————— $\frac{3}{5}$

   e. $\frac{2}{3}$ ——————— $\frac{7}{8}$

   f. $\frac{1}{3}$ ——————— $\frac{2}{4}$

   g. $\frac{2}{3}$ ——————— $\frac{5}{10}$

   h. $\frac{11}{12}$ ——————— $\frac{2}{5}$

   i. $\frac{49}{100}$ ——————— $\frac{51}{100}$

   j. $\frac{7}{16}$ ——————— $\frac{51}{100}$

COMMON CORE

Lesson 12: Reason using benchmarks to compare two fractions on the number line.

Date: 10/20/14

engage^ny

5.C.10

Name _____   Date _____

1. Place the following fractions on the number line given.

   a. $\frac{4}{3}$ b. $\frac{11}{6}$ c. $\frac{17}{12}$
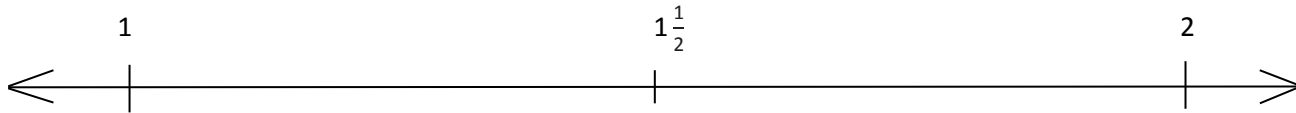
2. Use the number line in Problem 1 to compare the fractions by writing >, <, or = on the lines.

   a. $1\frac{5}{6}$ _____ $1\frac{5}{12}$ b. $1\frac{1}{3}$ _____ $1\frac{5}{12}$

3. Place the following fractions on the number line given.

   a. $\frac{11}{8}$ b. $\frac{7}{4}$ c. $\frac{15}{12}$
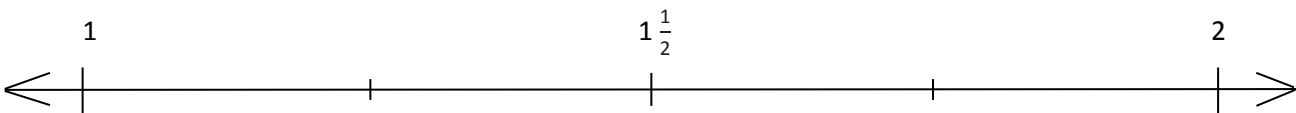
4. Use the number line in Problem 3 to explain the reasoning you used when determining whether $\frac{11}{8}$ or $\frac{15}{12}$ is greater.

COMMON CORE

Lesson 13:   Reason using benchmarks to compare two fractions on the number line.
Date: 10/20/14

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5. Compare the fractions given below by writing > or < on the lines.
   Give a brief explanation for each answer referring to benchmarks.

   a. $\dfrac{3}{8}$ _____ $\dfrac{7}{12}$

   b. $\dfrac{5}{12}$ _____ $\dfrac{7}{8}$

   c. $\dfrac{8}{6}$ _____ $\dfrac{11}{12}$

   d. $\dfrac{5}{12}$ _____ $\dfrac{1}{3}$

   e. $\dfrac{7}{5}$ _____ $\dfrac{11}{10}$

   f. $\dfrac{5}{4}$ _____ $\dfrac{7}{8}$

   g. $\dfrac{13}{12}$ _____ $\dfrac{9}{10}$

   h. $\dfrac{6}{8}$ _____ $\dfrac{5}{4}$

   i. $\dfrac{8}{12}$ _____ $\dfrac{8}{4}$

   j. $\dfrac{7}{5}$ _____ $\dfrac{16}{10}$

COMMON CORE

Lesson 13: Reason using benchmarks to compare two fractions on the number line.

Date: 10/20/14

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5.C.23

Name _____   Date _____

1. Compare the pairs of fractions by reasoning about the size of the units. Use >, <, or =.

    a.   1 fourth _____ 1 fifth

    b.   3 fourths _____ 3 fifths

    c.   1 tenth _____ 1 twelfth

    d.   7 tenths _____ 7 twelfths

2. Compare by reasoning about the following pairs of fractions with the same or related numerators. Use >, <, or =. Explain your thinking using words, pictures, or numbers. Problem 2(b) has been done for you.

    a. $\dfrac{3}{5}$ _____ $\dfrac{3}{4}$

    b. $\dfrac{2}{5} < \dfrac{4}{9}$

    because $\dfrac{2}{5} = \dfrac{4}{10}$

    4 tenths is less
    than 4 ninths because
    tenths are smaller than ninths.

    $\dfrac{2}{5} = \dfrac{4}{10}$

    $\dfrac{4}{9}$
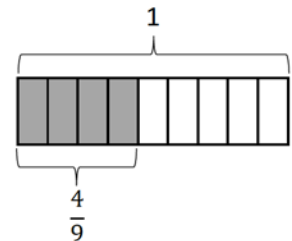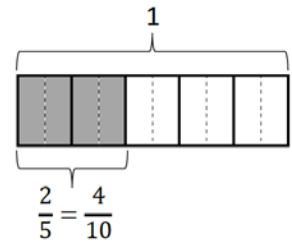
    c. $\dfrac{7}{11}$ _____ $\dfrac{7}{13}$

    d. $\dfrac{6}{7}$ _____ $\dfrac{12}{15}$

3. Draw two tape diagrams to model each pair of the following fractions with related denominators. Use >, <, or = to compare.

   a. $\frac{2}{3}$ ——————— $\frac{5}{6}$

   b. $\frac{3}{4}$ ——————— $\frac{7}{8}$

   c. $1\frac{3}{4}$ ——————— $1\frac{7}{12}$

Lesson 14:   Find common units or number of units to compare two fractions.
Date: 10/20/14

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4. Draw one number line to model each pair of fractions with related denominators. Use >, <, or = to compare.

   a. $\frac{2}{3}$ _____ $\frac{5}{6}$

   b. $\frac{3}{8}$ _____ $\frac{1}{4}$

   c. $\frac{2}{6}$ _____ $\frac{5}{12}$

   d. $\frac{8}{9}$ _____ $\frac{2}{3}$

5. Compare each pair of fractions using >, <, or =. Draw a model if you choose to.

   a. $\frac{3}{4}$ _____ $\frac{3}{7}$

   b. $\frac{4}{5}$ _____ $\frac{8}{12}$

   c. $\frac{7}{10}$ _____ $\frac{3}{5}$

   d. $\frac{2}{3}$ _____ $\frac{11}{15}$

   e. $\frac{3}{4}$ _____ $\frac{11}{12}$

   f. $\frac{7}{3}$ _____ $\frac{7}{4}$

   g. $1\frac{1}{3}$ _____ $1\frac{2}{9}$

   h. $1\frac{2}{3}$ _____ $1\frac{4}{7}$

6. Timmy drew the picture to the right and claimed that $\frac{2}{3}$ is less than $\frac{7}{12}$. Evan says he thinks $\frac{2}{3}$ is greater than $\frac{7}{12}$. Who is correct? Support your answer with a picture.

COMMON CORE™

Lesson 14: Find common units or number of units to compare two fractions.
Date: 10/20/14

engage^{ny}

5.C.37

Name _____   Date _____

1. Draw an area model for each pair of fractions, and use it to compare the two fractions by writing >, <, or = on the line. The first two have been partially done for you. Each rectangle represents 1.

a. $\dfrac{1}{2}$ _____<_____ $\dfrac{2}{3}$

$$\dfrac{1\times3}{2\times3}=\dfrac{3}{6}$$

$$\dfrac{2\times2}{3\times2}=\dfrac{4}{6}$$

b. $\dfrac{4}{5}$ _____ $\dfrac{3}{4}$

c. $\dfrac{3}{5}$ _____ $\dfrac{4}{7}$

d. $\dfrac{3}{7}$ _____ $\dfrac{2}{6}$

e. $\dfrac{5}{8}$ _____ $\dfrac{6}{9}$

f. $\dfrac{2}{3}$ _____ $\dfrac{3}{4}$

Lesson 15: Find common units or number of units to compare two fractions.
Date: 10/20/14

engage^ny   5.C.47

2. Rename the fractions, as needed, using multiplication in order to compare each pair of fractions by writing >, <, or =.

   a. $\frac{3}{5}$ _____ $\frac{5}{6}$

   b. $\frac{2}{6}$ _____ $\frac{3}{8}$

   c. $\frac{7}{5}$ _____ $\frac{10}{8}$

   d. $\frac{4}{3}$ _____ $\frac{6}{5}$

3. Use any method to compare the fractions. Record your answer using >, <, or =.

   a. $\frac{3}{4}$ _____ $\frac{7}{8}$

   b. $\frac{6}{8}$ _____ $\frac{3}{5}$

   c. $\frac{6}{4}$ _____ $\frac{8}{6}$

   d. $\frac{8}{5}$ _____ $\frac{9}{6}$

4. Explain two ways you have learned to compare fractions. Provide evidence using words, pictures, or numbers.

COMMON CORE

Lesson 15: Find common units or number of units to compare two fractions.
Date: 10/20/14

engage^ny

5.C.48

Name _____   Date _____

1. Solve.

   a. 3 fifths – 1 fifth = _____

   b. 5 fifths – 3 fifths = _____

   c. 3 halves – 2 halves = _____

   d. 6 fourths – 3 fourths = _____

2. Solve.

   a. $\frac{5}{6} - \frac{3}{6}$

   b. $\frac{6}{8} - \frac{4}{8}$

   c. $\frac{3}{10} - \frac{3}{10}$

   d. $\frac{5}{5} - \frac{4}{5}$

   e. $\frac{5}{4} - \frac{4}{4}$

   f. $\frac{5}{4} - \frac{3}{4}$

3. Solve. Use a number bond to show how to convert the difference to a mixed number. Problem (a) has been completed for you.

   a. $\frac{12}{8} - \frac{3}{8} = \frac{9}{8} \quad = 1\frac{1}{8}$

   $\frac{8}{8} \quad \frac{1}{8}$

   b. $\frac{12}{6} - \frac{5}{6}$
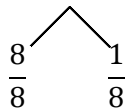
   c. $\frac{9}{5} - \frac{3}{5}$

   d. $\frac{14}{8} - \frac{3}{8}$

   e. $\frac{8}{4} - \frac{2}{4}$

   f. $\frac{15}{10} - \frac{3}{10}$

COMMON CORE | Lesson 16: | Use visual models to add and subtract two fractions with the same units. | **engage**ny | 5.D.10

Date: | 10/20/14

4. Solve. Write the sum in unit form.

   a. 2 fourths + 1 fourth = _____

   b. 4 fifths + 3 fifths = _____

5. Solve.

   a. $\frac{2}{8} + \frac{5}{8}$

   b. $\frac{4}{12} + \frac{5}{12}$

6. Solve. Use a number bond to decompose the sum. Record your final answer as a mixed number. Problem (a) has been completed for you.

   a. $\frac{3}{5} + \frac{4}{5} = \frac{7}{5} = 1\frac{2}{5}$

   $\frac{5}{5} \quad \frac{2}{5}$

   b. $\frac{4}{4} + \frac{3}{4}$

   c. $\frac{6}{9} + \frac{6}{9}$

   d. $\frac{7}{10} + \frac{6}{10}$

   e. $\frac{5}{6} + \frac{7}{6}$

   f. $\frac{9}{8} + \frac{5}{8}$

7. Solve. Use a number line to model your answer.

   a. $\frac{7}{4} - \frac{5}{4}$

   b. $\frac{5}{4} + \frac{2}{4}$

COMMON CORE

Lesson 16: Use visual models to add and subtract two fractions with the same units.

Date: 10/20/14

engage^ny

5.D.11

Name _____   Date _____

1. Use the following three fractions to write two subtraction and two addition number sentences.

a. $\frac{8}{5}, \frac{2}{5}, \frac{10}{5}$	b. $\frac{15}{8}, \frac{7}{8}, \frac{8}{8}$

2. Solve. Model each subtraction problem with a number line, and solve by both counting up and subtracting. Part (a) has been completed for you.

a. $1 - \frac{3}{4}$

$$\frac{4}{4} - \frac{3}{4} = \frac{1}{4}$$
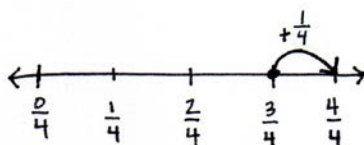
b. $1 - \frac{8}{10}$

c. $1 - \frac{3}{5}$

d. $1 - \frac{5}{8}$

e. $1\frac{2}{10} - \frac{7}{10}$

f. $1\frac{1}{5} - \frac{3}{5}$

3. Find the difference in two ways. Use number bonds to decompose the total. Part (a) has been completed for you.

a. $1\frac{2}{5} - \frac{4}{5}$

$$\frac{5}{5} + \frac{2}{5} = \frac{7}{5}$$

$$\frac{7}{5} - \frac{4}{5} = \boxed{\frac{3}{5}}$$

$$\frac{5}{5} - \frac{4}{5} = \frac{1}{5}$$

$$\frac{1}{5} + \frac{2}{5} = \boxed{\frac{3}{5}}$$

b. $1\frac{3}{6} - \frac{4}{6}$

c. $1\frac{6}{8} - \frac{7}{8}$

d. $1\frac{1}{10} - \frac{7}{10}$

e. $1\frac{3}{12} - \frac{6}{12}$

Name _____   Date _____
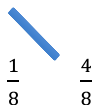
1. Show one way to solve each problem. Express sums and differences as a mixed number when possible.
    Use number bonds when it helps you. Part (a) is partially completed.

a. $\frac{2}{5} + \frac{3}{5} + \frac{1}{5}$ $= \frac{5}{5} + \frac{1}{5} = 1 + \frac{1}{5}$ $=$ _____	b. $\frac{3}{6} + \frac{1}{6} + \frac{3}{6}$	c. $\frac{5}{7} + \frac{7}{7} + \frac{2}{7}$
d. $\frac{7}{8} - \frac{3}{8} - \frac{1}{8}$	e. $\frac{7}{9} + \frac{1}{9} + \frac{4}{9}$	f. $\frac{4}{10} + \frac{11}{10} + \frac{5}{10}$
g. $1 - \frac{3}{12} - \frac{4}{12}$	h. $1\frac{2}{3} - \frac{1}{3} - \frac{1}{3}$	i. $\frac{10}{12} + \frac{5}{12} + \frac{2}{12} + \frac{7}{12}$

2. Monica and Stuart used different strategies to solve $\frac{5}{8} + \frac{2}{8} + \frac{5}{8}$.

Monica's Way	**Stuart's Way**
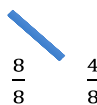
$$\frac{5}{8} + \frac{2}{8} + \frac{5}{8} = \frac{7}{8} + \frac{5}{8} = \frac{8}{8} + \frac{4}{8} = 1\frac{4}{8}$$

$$\frac{1}{8} \qquad \frac{4}{8}$$

$$\frac{5}{8} + \frac{2}{8} + \frac{5}{8} = \frac{12}{8} = 1 + \frac{4}{8} = 1\frac{4}{8}$$

$$\frac{8}{8} \qquad \frac{4}{8}$$

Whose strategy do you like best? Why?

3. You gave one solution for each part of Problem 1. Now, for each problem indicated below, give a different solution method.

1(c) $\frac{5}{7} + \frac{7}{7} + \frac{2}{7}$

1(f) $\frac{4}{10} + \frac{11}{10} + \frac{5}{10}$

1(g) $1 - \frac{3}{12} - \frac{4}{12}$

Name _____   Date _____

Use the RDW process to solve.

1. Sue ran $\frac{9}{10}$ mile on Monday and $\frac{7}{10}$ mile on Tuesday. How many miles did Sue run in the 2 days?

2. Mr. Salazar cut his son's birthday cake into 8 equal pieces. Mr. Salazar, Mrs. Salazar, and the birthday boy each ate 1 piece of cake. What fraction of the cake was left?

3. Maria spent $\frac{4}{7}$ of her money on a book and saved the rest. What fraction of her money did Maria save?

Lesson 19: Solve word problems involving addition and subtraction of fractions.
Date: 10/20/14

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4. Mrs. Jones had $1\frac{4}{8}$ pizzas left after a party. After giving some to Gary, she had $\frac{7}{8}$ pizza left. What fraction of a pizza did she give Gary?

5. A baker had 2 pans of corn bread. He served $1\frac{1}{4}$ pans. What fraction of a pan was left?

6. Marius combined $\frac{4}{8}$ gallon of lemonade, $\frac{3}{8}$ gallon of cranberry juice, and $\frac{6}{8}$ gallon of soda water to make punch for a party. How many gallons of punch did he make in all?

Name _____ Date _____

1. Use a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write the complete number sentence. Part (a) is partially completed.

a. $\frac{1}{4} + \frac{1}{8}$

b. $\frac{1}{4} + \frac{1}{12}$

$$\frac{}{8} + \frac{}{8} = \frac{}{8}$$

c. $\frac{2}{6} + \frac{1}{3}$

d. $\frac{1}{2} + \frac{3}{8}$

e. $\frac{3}{10} + \frac{3}{5}$

f. $\frac{2}{3} + \frac{2}{9}$

COMMON CORE

Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

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5.D.61

2. Estimate to determine if the sum is between 0 and 1 or 1 and 2. Draw a number line to model the addition. Then, write a complete number sentence. Part (a) has been completed for you.

a. $\frac{1}{2} + \frac{1}{4}$ $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

b. $\frac{1}{2} + \frac{4}{10}$
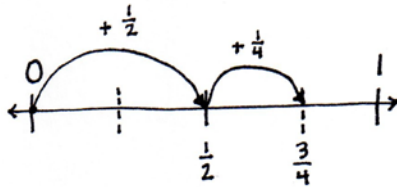
c. $\frac{6}{10} + \frac{1}{2}$

d. $\frac{2}{3} + \frac{3}{6}$

e. $\frac{3}{4} + \frac{6}{8}$

f. $\frac{4}{10} + \frac{6}{5}$

3. Solve the following addition problem without drawing a model. Show your work.

$$\frac{2}{3} + \frac{4}{6}$$

COMMON CORE

Lesson 20:   Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

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Name _____ Date _____

1. Draw a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

    a. $\frac{3}{4} + \frac{1}{2}$

    b. $\frac{2}{3} + \frac{3}{6}$

    c. $\frac{5}{6} + \frac{1}{3}$

    d. $\frac{4}{5} + \frac{7}{10}$

2. Draw a number line to model the addition. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

    a. $\frac{1}{2} + \frac{3}{4}$

    b. $\frac{1}{2} + \frac{6}{8}$

COMMON CORE | **Lesson 21:** Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

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c. $\frac{7}{10} + \frac{3}{5}$

d. $\frac{2}{3} + \frac{5}{6}$

3. Solve. Write the sum as a mixed number. Draw a model if needed.

a. $\frac{3}{4} + \frac{2}{8}$

b. $\frac{4}{6} + \frac{1}{2}$

c. $\frac{4}{6} + \frac{2}{3}$

d. $\frac{8}{10} + \frac{3}{5}$

e. $\frac{5}{8} + \frac{3}{4}$

f. $\frac{5}{8} + \frac{2}{4}$

g. $\frac{1}{2} + \frac{5}{8}$

h. $\frac{3}{10} + \frac{4}{5}$

COMMON CORE

Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

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5.D.74

Name _____   Date _____

1. Draw a tape diagram to match each number sentence. Then, complete the number sentence.

    a. $3 + \frac{1}{3} =$ _____

    b. $4 + \frac{3}{4} =$ _____

    c. $3 - \frac{1}{4} =$ _____

    d. $5 - \frac{2}{5} =$ _____

2. Use the following three numbers to write two subtraction and two addition number sentences.

    a. $6, \; 6\frac{3}{8}, \; \frac{3}{8}$

    b. $\frac{4}{7}, \; 9, \; 8\frac{3}{7}$

3. Solve using a number bond. Draw a number line to represent each number sentence. The first one has been done for you.

    a. $4 - \frac{1}{3} = \quad 3\frac{2}{3}$

    b. $5 - \frac{2}{3} =$ _____

COMMON CORE

Lesson 22:	Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.
Date:	10/20/14

engage^ny   5.E.12
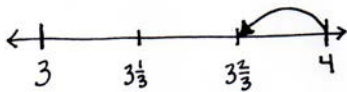
c. $7 - \frac{3}{8} =$ _____

d. $10 - \frac{4}{10} =$ _____

4. Complete the subtraction sentences using number bonds.

a. $3 - \frac{1}{10} =$ _____

b. $5 - \frac{3}{4} =$ _____

c. $6 - \frac{5}{8} =$ _____

d. $7 - \frac{3}{9} =$ _____

e. $8 - \frac{6}{10} =$ _____

f. $29 - \frac{9}{12} =$ _____

COMMON CORE

Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.

Date: 10/20/14

engage^ny 5.E.13

Name _____   Date _____

1. Circle any fractions that are equivalent to a whole number. Record the whole number below the fraction.

   a. Count by 1 thirds. Start at 0 thirds. End at 6 thirds.

   $\frac{0}{3},$ $\frac{1}{3},$

      0

   b. Count by 1 halves. Start at 0 halves. End at 8 halves.

2. Use parentheses to show how to make ones in the following number sentence.

   $$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 3$$

3. Multiply, as shown below. Draw a number line to support your answer.

   a. $6 \times \frac{1}{3}$
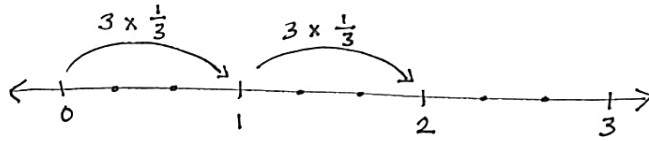
   $$6 \times \frac{1}{3} = 2 \times \frac{3}{3} = 2$$

   b. $6 \times \frac{1}{2}$

   c. $12 \times \frac{1}{4}$

4. Multiply, as shown below. Write the product as a mixed number. Draw a number line to support your answer.

   a. 7 copies of 1 third
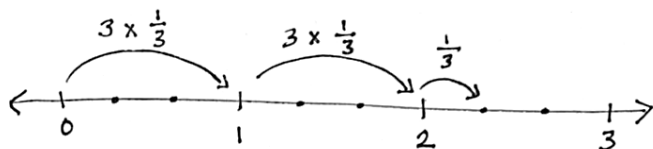
$$7 \times \frac{1}{3} = \left(2 \times \frac{3}{3}\right) + \frac{1}{3} = 2 + \frac{1}{3} = 2\frac{1}{3}$$

   b. 7 copies of 1 half

   c. $10 \times \frac{1}{4}$

   d. $14 \times \frac{1}{3}$

COMMON CORE

Lesson 23:   Add and multiply unit fractions to build fractions greater than 1 using visual models.
Date: 10/20/14

engage^ny   5.E.25

Name _____   Date _____

1. Rename each fraction as a mixed number by decomposing it into two parts as shown below. Model the decomposition with a number line and a number bond.

a. $\frac{11}{3}$
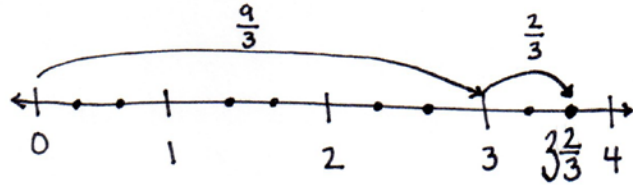
$$\frac{11}{3} = \frac{9}{3} + \frac{2}{3} = 3 + \frac{2}{3} = 3\frac{2}{3}$$

b. $\frac{12}{5}$

c. $\frac{13}{2}$

d. $\frac{15}{4}$

2. Convert each fraction to a mixed number. Show your work as in the example. Model with a number line.

   a. $\frac{11}{3}$

   $$\frac{11}{3} = \frac{3 \times 3}{3} + \frac{2}{3} = 3 + \frac{2}{3} = 3\frac{2}{3}$$
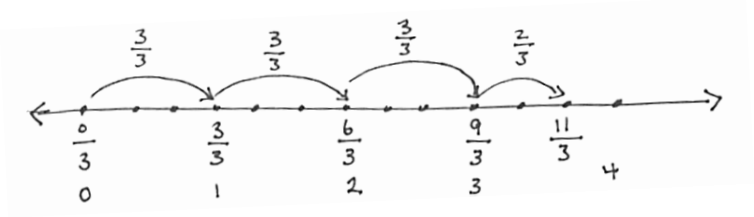
   b. $\frac{9}{2}$

   c. $\frac{17}{4}$

3. Convert each fraction to a mixed number.

a. $\frac{9}{4} =$	b. $\frac{17}{5} =$	c. $\frac{25}{6} =$
d. $\frac{30}{7} =$	e. $\frac{38}{8} =$	f. $\frac{48}{9} =$
g. $\frac{63}{10} =$	h. $\frac{84}{10} =$	i. $\frac{37}{12} =$

COMMON CORE

Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms.

Date: 10/20/14

engage^ny 5.E.36

Name _____ Date _____

1. Convert each mixed number to a fraction greater than 1. Draw a number line to model your work.

   a. $3\frac{1}{4}$
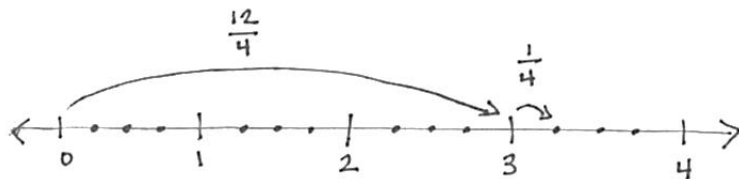
   $3\frac{1}{4} = 3 + \frac{1}{4} = \frac{12}{4} + \frac{1}{4} = \frac{13}{4}$

   b. $2\frac{4}{5}$

   c. $3\frac{5}{8}$

   d. $4\frac{4}{10}$

   e. $4\frac{7}{9}$

COMMON CORE

Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.
Date: 10/20/14

engage^{ny}

5.E.46

2. Convert each mixed number to a fraction greater than 1. Show your work as in the example.
    (Note: $3 \times \frac{4}{4} = \frac{3 \times 4}{4}$)

    a. $3\frac{3}{4}$

    $$3\frac{3}{4} = 3 + \frac{3}{4} = \left(3 \times \frac{4}{4}\right) + \frac{3}{4} = \frac{12}{4} + \frac{3}{4} = \frac{15}{4}$$

    b. $4\frac{1}{3}$

    c. $4\frac{3}{5}$

    d. $4\frac{6}{8}$

3. Convert each mixed number to a fraction greater than 1.

a. $2\frac{3}{4}$	b. $2\frac{2}{5}$	c. $3\frac{3}{6}$
d. $3\frac{3}{8}$	e. $3\frac{1}{10}$	f. $4\frac{3}{8}$
g. $5\frac{2}{3}$	h. $6\frac{1}{2}$	i. $7\frac{3}{10}$

Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.

Date: 10/20/14

engage^{ny}

5.E.47

Name _____   Date _____

1.

   a.   Plot the following points on the number line without measuring.

      i. $2\frac{7}{8}$ ii. $3\frac{1}{6}$ iii. $\frac{29}{12}$

$$\longleftarrow \!\!\!\!\!\mid\!\!\underset{2}{\quad}\!\!\!\!\!\mid\!\!\underset{3}{\quad}\!\!\!\!\!\mid\!\!\underset{4}{\quad}\!\!\longrightarrow$$
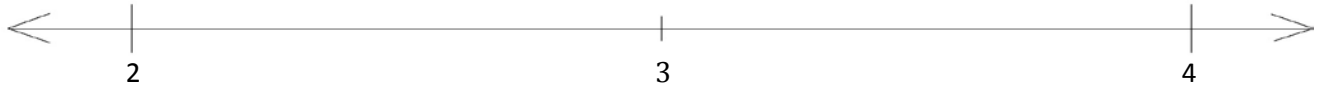
   b.   Use the number line in Problem 1(a) to compare the fractions by writing >, <, or =.

      i. $\frac{29}{12}$ _____ $2\frac{7}{8}$ ii. $\frac{29}{12}$ _____ $3\frac{1}{6}$

2.

   a.   Plot the following points on the number line without measuring.

      i. $\frac{70}{9}$ ii. $8\frac{2}{4}$ iii. $\frac{25}{3}$

$$\longleftarrow \!\!\!\!\!\mid\!\!\underset{7}{\quad}\!\!\!\!\!\mid\!\!\underset{8}{\quad}\!\!\!\!\!\mid\!\!\underset{9}{\quad}\!\!\longrightarrow$$
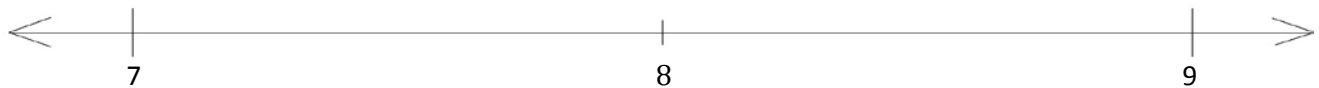
   b.   Compare the following by writing >, <, or =.

      i. $8\frac{2}{4}$ _____ $\frac{25}{3}$ ii. $\frac{70}{9}$ _____ $8\frac{2}{4}$

   c.   Explain how you plotted the points in Problem 2(a).

COMMON CORE | Lesson 26: Compare fractions greater than 1 by reasoning using benchmark fractions.
Date: 10/20/14

engage^ny   5.E.57

3. Compare the fractions given below by writing >, <, or =. Give a brief explanation for each answer, referring to benchmark fractions.

a. $5\frac{1}{3}$ _____ $4\frac{3}{4}$

b. $\frac{12}{6}$ _____ $\frac{25}{12}$

c. $\frac{18}{7}$ _____ $\frac{17}{5}$

d. $5\frac{2}{5}$ _____ $5\frac{5}{8}$

e. $6\frac{2}{3}$ _____ $6\frac{3}{7}$

f. $\frac{31}{7}$ _____ $\frac{32}{8}$

g. $\frac{31}{10}$ _____ $\frac{25}{8}$

h. $\frac{39}{12}$ _____ $\frac{19}{6}$

i. $\frac{49}{50}$ _____ $3\frac{90}{100}$

j. $5\frac{5}{12}$ _____ $5\frac{51}{100}$

Name _____   Date _____

1. Draw a tape diagram to model each comparison. Use >, <, or = to compare.

   a. $3\frac{2}{3}$ _____ $3\frac{5}{6}$

   b. $3\frac{2}{5}$ _____ $3\frac{6}{10}$

   c. $4\frac{3}{6}$ _____ $4\frac{1}{3}$

   d. $4\frac{5}{8}$ _____ $\frac{19}{4}$

2. Use an area model to make like units. Then, use >, <, or = to compare.

   a. $2\frac{3}{5}$ _____ $\frac{18}{7}$

   b. $2\frac{3}{8}$ _____ $2\frac{1}{3}$

Lesson 27:   Compare fractions greater than 1 by creating common numerators or denominators.

Date: 10/20/14

engage^ny   **5.E.69**

3. Compare each pair of fractions using >, <, or = using any strategy.

a. $5\frac{3}{4}$ _____ $5\frac{3}{8}$

b. $5\frac{2}{5}$ _____ $5\frac{8}{10}$

c. $5\frac{6}{10}$ _____ $\frac{27}{5}$

d. $5\frac{2}{3}$ _____ $5\frac{9}{15}$

e. $\frac{7}{2}$ _____ $\frac{7}{3}$

f. $\frac{12}{3}$ _____ $\frac{15}{4}$

g. $\frac{22}{5}$ _____ $4\frac{2}{7}$

h. $\frac{21}{4}$ _____ $5\frac{2}{5}$

i. $\frac{29}{8}$ _____ $\frac{11}{3}$

j. $3\frac{3}{4}$ _____ $3\frac{4}{7}$

Name _____   Date _____

1. The chart to the right shows the distance fourth graders in Ms. Smith's class were able to run before stopping for a rest. Create a line plot to display the data in the table.

Student	Distance (in miles)
Joe	$2\frac{1}{2}$
Arianna	$1\frac{3}{4}$
Bobbi	$2\frac{1}{8}$
Morgan	$1\frac{5}{8}$
Jack	$2\frac{5}{8}$
Saisha	$2\frac{1}{4}$
Tyler	$2\frac{2}{4}$
Jenny	$\frac{5}{8}$
Anson	$2\frac{2}{8}$
Chandra	$2\frac{4}{8}$

COMMON CORE

Lesson 28:   Solve word problems with line plots.
Date: 10/20/14

engage^ny

5.E.79

2. Solve each problem.

   a. Who ran a mile farther than Jenny?

   b. Who ran a mile less than Jack?

   c. Two students ran exactly $2\frac{1}{4}$ miles. Identify the students. How many quarter miles did each student run?

   d. What is the difference, in miles, between the longest and shortest distance run?

   e. Compare the distances run by Arianna and Morgan using >, <, or =.

   f. Ms. Smith ran twice as far as Jenny. How far did Ms. Smith run? Write her distance as a mixed number.

   g. Mr. Reynolds ran $1\frac{3}{10}$ miles. Use >, <, or = to compare the distance Mr. Reynolds ran to the distance that Ms. Smith ran. Who ran farther?

3. Using the information in the table and on the line plot, develop and write a question similar to those above. Solve, and then ask your partner to solve. Did you solve in the same way? Did you get the same answer?

Name _____   Date _____

1. Estimate each sum or difference to the nearest half or whole number by rounding. Explain your estimate using words or a number line.

   a. $2\frac{1}{12} + 1\frac{7}{8} \approx$ _____

   b. $1\frac{11}{12} + 5\frac{3}{4} \approx$ _____

   c. $8\frac{7}{8} - 2\frac{1}{9} \approx$ _____

   d. $6\frac{1}{8} - 2\frac{1}{12} \approx$ _____

   e. $3\frac{3}{8} + 5\frac{1}{9} \approx$ _____

COMMON CORE

Lesson 29:   Estimate sums and differences using benchmark numbers.
Date: 10/20/14

engage^ny   5.F.10

2. Estimate each sum or difference to the nearest half or whole number by rounding. Explain your estimate using words or a number line.

   a. $\frac{16}{5} + \frac{11}{4} \approx$ _____

   b. $\frac{17}{3} - \frac{15}{7} \approx$ _____

   c. $\frac{59}{10} + \frac{26}{10} \approx$ _____

3. Montoya's estimate for $8\frac{5}{8} - 2\frac{1}{3}$ was 7. Julio's estimate was $6\frac{1}{2}$. Whose estimate do you think is closer to the actual difference? Explain.

4. Use benchmark numbers or mental math to estimate the sum or difference.

a. $14\frac{3}{4} + 29\frac{11}{12}$	b. $3\frac{5}{12} + 54\frac{5}{8}$
c. $17\frac{4}{5} - 8\frac{7}{12}$	d. $\frac{65}{8} - \frac{37}{6}$

Name _____ Date _____

1. Solve.

   a. $3\frac{1}{4} + \frac{1}{4}$

   b. $7\frac{3}{4} + \frac{1}{4}$

   c. $\frac{3}{8} + 5\frac{2}{8}$
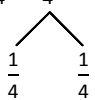
   d. $\frac{1}{8} + 6\frac{7}{8}$

2. Complete the number sentences.

a. $4\frac{7}{8} + $ _____ $= 5$	b. $7\frac{2}{5} + $ ___ $= 8$
c. $3 = 2\frac{1}{6} + $ _____	d. $12 = 11\frac{1}{12} + $ _____

3. Use a number bond and the arrow way to show how to make one. Solve.

   a. $2\frac{3}{4} + \frac{2}{4}$

   b. $3\frac{3}{5} + \frac{3}{5}$

COMMON CORE™

Lesson 30: Add a mixed number and a fraction.
Date: 10/20/14

engageny

5.F.22

4. Solve.

a. $4\frac{2}{3} + \frac{2}{3}$	b. $3\frac{3}{5} + \frac{4}{5}$
c. $5\frac{4}{6} + \frac{5}{6}$	d. $\frac{7}{8} + 6\frac{4}{8}$
e. $\frac{7}{10} + 7\frac{9}{10}$	f. $9\frac{7}{12} + \frac{11}{12}$
g. $2\frac{70}{100} + \frac{87}{100}$	h. $\frac{50}{100} + 16\frac{78}{100}$

5. To solve $7\frac{9}{10} + \frac{5}{10}$, Maria thought, "$7\frac{9}{10} + \frac{1}{10} = 8$ and $8 + \frac{4}{10} = 8\frac{4}{10}$."

Paul thought, "$7\frac{9}{10} + \frac{5}{10} = 7\frac{14}{10} = 7 + \frac{10}{10} + \frac{4}{10} = 8\frac{4}{10}$." Explain why Maria and Paul are both right.

Name _____   Date _____

1. Solve.

    a. $3\frac{1}{3}$ + $2\frac{2}{3}$ = 5 + $\frac{3}{3}$ =

    3      $\frac{1}{3}$ 2 $\frac{2}{3}$

    b. $4\frac{1}{4} + 3\frac{2}{4}$

    c. $2\frac{2}{6} + 6\frac{4}{6}$

2. Solve. Use a number line to show your work.

    a. $2\frac{4}{5} + 1\frac{2}{5}$ = 3 + $\frac{6}{5}$ = _____

    $\frac{5}{5}$ $\frac{1}{5}$

    b. $1\frac{3}{4} + 3\frac{3}{4}$

    c. $3\frac{3}{8} + 2\frac{6}{8}$

---

3. Solve. Use the arrow way to show how to make one.

  a. $2\frac{4}{6} + 1\frac{5}{6} = 3\frac{4}{6} + \frac{5}{6} =$

$$\frac{2}{6} \quad \frac{3}{6}$$

  b. $1\frac{3}{4} + 3\frac{3}{4}$

  c. $3\frac{3}{8} + 2\frac{6}{8}$

4. Solve. Use whichever method you prefer.

  a. $1\frac{3}{5} + 3\frac{4}{5}$

  b. $2\frac{6}{8} + 3\frac{7}{8}$

  c. $3\frac{8}{12} + 2\frac{7}{12}$

Name _____   Date _____

1. Subtract. Model with a number line or the arrow way.

   a. $3\frac{3}{4} - \frac{1}{4}$

   b. $4\frac{7}{10} - \frac{3}{10}$

   c. $5\frac{1}{3} - \frac{2}{3}$

   d. $9\frac{3}{5} - \frac{4}{5}$

2. Use decomposition to subtract the fractions. Model with a number line or the arrow way.

   a. $5\frac{3}{5} - \frac{4}{5}$

   $$\frac{3}{5} \qquad \frac{1}{5}$$

   b. $4\frac{1}{4} - \frac{2}{4}$

   c. $5\frac{1}{3} - \frac{2}{3}$

   d. $2\frac{3}{8} - \frac{5}{8}$

engage^{ny}   **5.F.47**
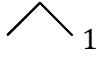
3. Decompose the total to subtract the fractions.

   a. $3\frac{1}{8} - \frac{3}{8} = 2\frac{1}{8} + \frac{5}{8} = 2\frac{6}{8}$

   $2\frac{1}{8}$ ⟋⟍ 1

   b. $5\frac{1}{8} - \frac{7}{8}$

   c. $5\frac{3}{5} - \frac{4}{5}$

   d. $5\frac{4}{6} - \frac{5}{6}$

   e. $6\frac{4}{12} - \frac{7}{12}$

   f. $9\frac{1}{8} - \frac{5}{8}$

   g. $7\frac{1}{6} - \frac{5}{6}$

   h. $8\frac{3}{10} - \frac{4}{10}$

   i. $12\frac{3}{5} - \frac{4}{5}$

   j. $11\frac{2}{6} - \frac{5}{6}$

COMMON CORE™

Lesson 32: Subtract a fraction from a mixed number.
Date: 10/20/14

engage^ny

5.F.48

Name _____   Date _____

1. Write a related addition sentence. Subtract by counting on. Use a number line or the arrow way to help. The first one has been partially done for you.

   a. $3\frac{1}{3} - 1\frac{2}{3} = $ _____

   $1\frac{2}{3} + $ _____ $ = 3\frac{1}{3}$

   b. $5\frac{1}{4} - 2\frac{3}{4} = $ _____

2. Subtract, as shown in Problem 2(a), by decomposing the fractional part of the number you are subtracting. Use a number line or the arrow way to help you.

   a. $3\frac{1}{4} - 1\frac{3}{4} = 2\frac{1}{4} - \frac{3}{4} = 1\frac{2}{4}$

   $$\frac{1}{4} \quad \frac{2}{4}$$

   b. $4\frac{1}{5} - 2\frac{4}{5}$

   c. $5\frac{3}{7} - 3\frac{6}{7}$

3. Subtract, as shown in Problem 3(a), by decomposing to take one out.

   a. $5\frac{3}{5} - 2\frac{4}{5} = 3\frac{3}{5} - \frac{4}{5}$

   $2\frac{3}{5}$ 1

   b. $4\frac{3}{6} - 3\frac{5}{6}$

   c. $8\frac{3}{10} - 2\frac{7}{10}$

4. Solve using any method.

   a. $6\frac{1}{4} - 3\frac{3}{4}$ b. $5\frac{1}{8} - 2\frac{7}{8}$

   c. $8\frac{3}{12} - 3\frac{8}{12}$ d. $5\frac{1}{100} - 2\frac{97}{100}$

COMMON CORE

Lesson 33:   Subtract a mixed number from a mixed number.
Date: 10/20/14

engage^{ny}   **5.F.60**

Name _____   Date _____

1. Subtract.

   a. $4\frac{1}{3} - \frac{2}{3}$

   3 ⟨ $\frac{4}{3}$

   b. $5\frac{2}{4} - \frac{3}{4}$

   c. $8\frac{3}{5} - \frac{4}{5}$

2. Subtract the ones first.

   a. $3\frac{1}{4} - 1\frac{3}{4} = 2\frac{1}{4} - \frac{3}{4} = 1\frac{2}{4}$

   1 ⟨ $\frac{5}{4}$

   b. $4\frac{2}{5} - 1\frac{3}{5}$

c. $5\frac{2}{6} - 3\frac{5}{6}$

d. $9\frac{3}{5} - 2\frac{4}{5}$

3. Solve using any strategy.

a. $7\frac{3}{8} - 2\frac{5}{8}$

b. $6\frac{4}{10} - 3\frac{8}{10}$

c. $8\frac{3}{12} - 3\frac{8}{12}$

d. $14\frac{2}{50} - 6\frac{43}{50}$

Name _____   Date _____

1. Draw and label a tape diagram to show the following are true.

   a. 8 fifths = 4 × (2 fifths) = (4 × 2) fifths

   b. 10 sixths = 5 × (2 sixths) = (5 × 2) sixths

2. Write the expression in unit form to solve.

   a. $7 \times \frac{2}{3}$

   b. $4 \times \frac{2}{4}$

   c. $16 \times \frac{3}{8}$

   d. $6 \times \frac{5}{8}$

![COMMON CORE]

Lesson 35: Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the associative property and visual models.

Date: 10/20/14

engage^{ny}

5.G.10

3. Solve.

   a. $7 \times \frac{4}{9}$

   b. $6 \times \frac{3}{5}$

   c. $8 \times \frac{3}{4}$

   d. $16 \times \frac{3}{8}$

   e. $12 \times \frac{7}{10}$

   f. $3 \times \frac{54}{100}$

4. Maria needs $\frac{3}{5}$ yard of fabric for each costume. How many yards of fabric does she need for 6 costumes?

COMMON CORE™ | **Lesson 35:** Represent the multiplication of *n* times *a/b* as (*n × a*)/*b* using the associative property and visual models.
Date: 10/20/14

engage^ny   5.G.11

Name _____   Date _____

1. Draw a tape diagram to represent
   $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$.

2. Draw a tape diagram to represent
   $\frac{7}{12} + \frac{7}{12} + \frac{7}{12}$.

   Write a multiplication expression equal to
   $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$.

   Write a multiplication expression equal to
   $\frac{7}{12} + \frac{7}{12} + \frac{7}{12}$

3. Rewrite each repeated addition problem as a multiplication problem and solve. Express the result as a mixed number. The first one has been started for you.

   a. $\frac{7}{5} + \frac{7}{5} + \frac{7}{5} + \frac{7}{5} = 4 \times \frac{7}{5} = \frac{4 \times 7}{5} =$

   b. $\frac{9}{10} + \frac{9}{10} + \frac{9}{10}$

   c. $\frac{11}{12} + \frac{11}{12} + \frac{11}{12} + \frac{11}{12} + \frac{11}{12}$

COMMON CORE   Lesson 36: Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the associative property and visual models.   **engage**^ny   5.G.20

Date: 10/20/14

4. Solve using any method. Express your answers as whole or mixed numbers.

    a. $8 \times \frac{2}{3}$

    b. $12 \times \frac{3}{4}$

    c. $50 \times \frac{4}{5}$

    d. $26 \times \frac{7}{8}$

5. Morgan poured $\frac{9}{10}$ liter of punch into each of 6 bottles. How many liters of punch did she pour in all?

6. A recipe calls for $\frac{3}{4}$ cup rice. How many cups of rice are needed to make the recipe 14 times?

7. A butcher prepared 120 sausages using $\frac{3}{8}$ pound of meat for each. How many pounds did he use in all?

COMMON CORE

Lesson 36: Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the associative property and visual models.

Date: 10/20/14

engage^ny   5.G.21

Name _____   Date _____

1. Draw tape diagrams to show two ways to represent 2 units of $4\frac{2}{3}$.

Write a multiplication expression to match each tape diagram.

2. Solve the following using the distributive property. The first one has been done for you. (As soon as you are ready, you may omit the step that is in line 2.)

a. $3 \times 6\frac{4}{5} = 3 \times \left(6 + \frac{4}{5}\right)$ $\qquad = (3 \times 6) + \left(3 \times \frac{4}{5}\right)$ $\qquad = 18 + \frac{12}{5}$ $\qquad = 18 + 2\frac{2}{5}$ $\qquad = 20\frac{2}{5}$	b. $2 \times 4\frac{2}{3}$
c. $3 \times 2\frac{5}{8}$	d. $2 \times 4\frac{7}{10}$

COMMON CORE™   **Lesson 37:**   Find the product of a whole number and a mixed number using the distributive property.   engage^{ny}   5.G.31

Date: 10/20/14

e. $3 \times 7\frac{3}{4}$	f. $6 \times 3\frac{1}{2}$
g. $4 \times 9\frac{1}{5}$	h. $5\frac{6}{8} \times 4$

3. For one dance costume, Saisha needs $4\frac{2}{3}$ feet of ribbon. How much ribbon does she need for 5 identical costumes?

Lesson 37:   Find the product of a whole number and a mixed number using the distributive property.

Date: 10/20/14

engage^{ny}

5.G.32

Name _____   Date _____

1. Fill in the unknown factors.

   a. $7 \times 3\frac{4}{5} = (\_\_ \times 3) + (\_\_ \times \frac{4}{5})$

   b. $3 \times 12\frac{7}{8} = (3 \times \_\_) + (3 \times \_\_)$

2. Multiply. Use the distributive property.

   a. $7 \times 8\frac{2}{5}$

   b. $4\frac{5}{6} \times 9$

   c. $3 \times 8\frac{11}{12}$

   d. $5 \times 20\frac{8}{10}$

Lesson 38:   Find the product of a whole number and a mixed number using the distributive property.

Date: 10/20/14

engage^{ny}   **5.G.41**

e. $25\frac{4}{100} \times 4$

3. The distance around the park is $2\frac{5}{10}$ miles. Cecilia ran around the park 3 times. How far did she run?

4. Windsor the dog ate $4\frac{3}{4}$ snack bones each day for a week. How many bones did Windsor eat that week?

COMMON CORE™

Lesson 38:   Find the product of a whole number and a mixed number using the
              distributive property.
Date: 10/20/14

engage^{ny}   5.G.42

Name _____   Date _____

Use the RDW process to solve.

1. Tameka ran $2\frac{5}{8}$ miles. Her sister ran twice as far. How far did Tameka's sister run?

2. Natasha's sculpture was $5\frac{3}{16}$ inches tall. Maya's was 4 times as tall. How much shorter was Natasha's sculpture than Maya's?

3. A seamstress needs $1\frac{5}{8}$ yards of fabric to make a child's dress. She needs 3 times as much fabric to make a woman's dress. How many yards of fabric does she need for both dresses?

Lesson 39:   Solve multiplicative comparison word problems involving fractions.
Date: 10/20/14

engage^ny   5.G.53

4. A piece of blue yarn is $5\frac{2}{3}$ yards long. A piece of pink yarn is 5 times as long as the blue yarn. Bailey tied them together with a knot that used $\frac{1}{3}$ yard from each piece of yarn. What is the total length of the yarn tied together?

5. A truck driver drove $35\frac{2}{10}$ miles before he stopped for breakfast. He then drove 5 times as far before he stopped for lunch. How far did he drive that day before his lunch break?

6. Mr. Washington's motorcycle needs $5\frac{5}{10}$ gallons of gas to fill the tank. His van needs 5 times as much gas to fill it. If Mr. Washington pays \$3 per gallon for gas, how much will it cost him to fill both the motorcycle and the van?

Name _____   Date _____

1. The chart to the right shows the height of some football players.

   a. Use the data to create a line plot at the bottom of this page and to answer the questions below.

   b. What is the difference in height of the tallest and shortest players?

   c. Player I and Player B have a combined height that is $1\frac{1}{8}$ feet taller than a school bus. What is the height of a school bus?

Player	Height (in feet)
A	$6\frac{1}{4}$
B	$5\frac{7}{8}$
C	$6\frac{1}{2}$
D	$6\frac{1}{4}$
E	$6\frac{2}{8}$
F	$5\frac{7}{8}$
G	$6\frac{1}{8}$
H	$6\frac{5}{8}$
I	$5\frac{6}{8}$
J	$6\frac{1}{8}$

COMMON CORE

Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.

Date: 10/20/14

engage^ny   5.G.65

2. One of the players on the team is now 4 times as tall as he was at birth, when he measured $1\frac{5}{8}$ feet. Who is the player?

3. Six of the players on the team weigh over 300 pounds. Doctors recommend that players of this weight drink at least $3\frac{3}{4}$ quarts of water each day. At least how much water should be consumed per day by all 6 players?

4. Nine of the players on the team weigh about 200 pounds. Doctors recommend that people of this weight each eat about $7\frac{7}{10}$ grams of protein per pound each day. About how many combined grams of protein should these 9 players eat per day?

COMMON CORE

Lesson 40:	Solve word problems involving the multiplication of a whole number
	and a fraction including those involving line plots.
Date:	10/20/14

engage^{ny}

5.G.66

Name _____   Date _____

1. Find the sums.

    a. $\frac{0}{3} + \frac{1}{3} + \frac{2}{3} + \frac{3}{3}$

    b. $\frac{0}{4} + \frac{1}{4} + \frac{2}{4} + \frac{3}{4} + \frac{4}{4}$

    c. $\frac{0}{5} + \frac{1}{5} + \frac{2}{5} + \frac{3}{5} + \frac{4}{5} + \frac{5}{5}$

    d. $\frac{0}{6} + \frac{1}{6} + \frac{2}{6} + \frac{3}{6} + \frac{4}{6} + \frac{5}{6} + \frac{6}{6}$

    e. $\frac{0}{7} + \frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} + \frac{5}{7} + \frac{6}{7} + \frac{7}{7}$

    f. $\frac{0}{8} + \frac{1}{8} + \frac{2}{8} + \frac{3}{8} + \frac{4}{8} + \frac{5}{8} + \frac{6}{8} + \frac{7}{8} + \frac{8}{8}$

2. Describe a pattern you notice when adding the sums of fractions with even denominators as opposed to those with odd denominators.

3. How would the sums change if the addition started with the unit fraction rather than with 0?

COMMON CORE™   **Lesson 41:**   Find and use a pattern to calculate the sum of all fractional parts
                          between 0 and 1. Share and critique peer strategies.   **engage**^ny   **5.H.8**
                          Date: 10/20/14

4. Find the sums.

a. $\dfrac{0}{10} + \dfrac{1}{10} + \dfrac{2}{10} + \ldots \dfrac{10}{10}$

b. $\dfrac{0}{12} + \dfrac{1}{12} + \dfrac{2}{12} + \ldots \dfrac{12}{12}$

c. $\dfrac{0}{15} + \dfrac{1}{15} + \dfrac{2}{15} + \ldots + \dfrac{15}{15}$

d. $\dfrac{0}{25} + \dfrac{1}{25} + \dfrac{2}{25} + \ldots \dfrac{25}{25}$

e. $\dfrac{0}{50} + \dfrac{1}{50} + \dfrac{2}{50} + \ldots \dfrac{50}{50}$

f. $\dfrac{0}{100} + \dfrac{1}{100} + \dfrac{2}{100} + \ldots \dfrac{100}{100}$

5. Compare your strategy for finding the sums in Problems 4(d), 4(e), and 4(f) with a partner.

6. How can you apply this strategy to find the sum of all the whole numbers from 0 to 100?

COMMON CORE   Lesson 41:   Find and use a pattern to calculate the sum of all fractional parts between 0 and 1. Share and critique peer strategies.   **engage**^{ny}   5.H.9

Date: 10/20/14

Name _____   Date _____

1. Draw a number bond and write the number sentence to match each tape diagram. The first one is done for you.

a.

$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$

b.

c.

d.

e.

f.

g.

h.

COMMON CORE™

Lesson 1: Decompose fractions as a sum of unit fractions using tape diagrams.
Date: 10/20/14

engage^ny

5.A.14
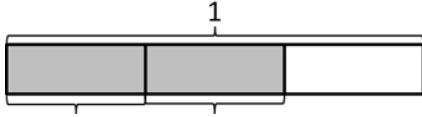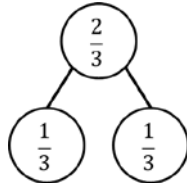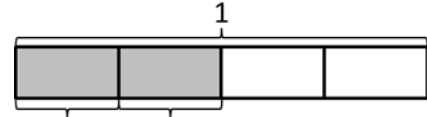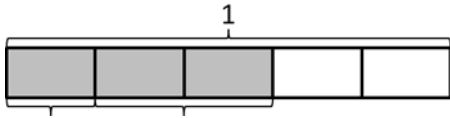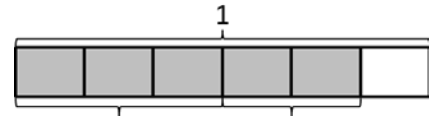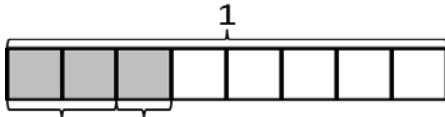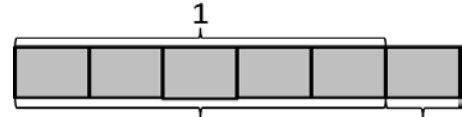
2. Draw and label tape diagrams to match each number sentence.

a. $\frac{5}{8} = \frac{2}{8} + \frac{2}{8} + \frac{1}{8}$

b. $\frac{12}{8} = \frac{6}{8} + \frac{2}{8} + \frac{4}{8}$

c. $\frac{11}{10} = \frac{5}{10} + \frac{5}{10} + \frac{1}{10}$

d. $\frac{13}{12} = \frac{7}{12} + \frac{1}{12} + \frac{5}{12}$

e. $1\frac{1}{4} = 1 + \frac{1}{4}$

f. $1\frac{2}{7} = 1 + \frac{2}{7}$

COMMON CORE	**Lesson 1:** Decompose fractions as a sum of unit fractions using tape diagrams. **Date:** 10/20/14

engage^{ny}   5.A.15

Name _____   Date _____

1. Step 1: Draw and shade a tape diagram of the given fraction.
    Step 2: Record the decomposition as a sum of unit fractions.
    Step 3: Record the decomposition of the fraction two more ways.
    (The first one has been done for you.)

a. $\frac{5}{6}$
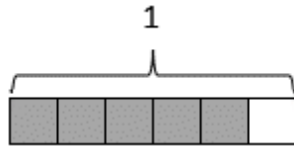
$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$

$\frac{5}{6} = \frac{2}{6} + \frac{2}{6} + \frac{1}{6}$

$\frac{5}{6} = \frac{1}{6} + \frac{4}{6}$

b. $\frac{6}{8}$

c. $\frac{7}{10}$

Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.
Date: 10/20/14

engage^ny   5.A.25

2. Step 1: Draw and shade a tape diagram of the given fraction.

   Step 2: Record the decomposition of the fraction in three different ways using number sentences.

   a. $\dfrac{10}{12}$

   b. $\dfrac{5}{4}$

   c. $\dfrac{6}{5}$

   d. $1\dfrac{1}{4}$

Lesson 2: Decompose fractions as a sum of unit fractions using tape diagrams.

Date: 10/20/14

engage^{ny} **5.A.26**

Name _____   Date _____

1. Decompose each fraction modeled by a tape diagram as a sum of unit fractions. Write the equivalent multiplication sentence. The first one has been done for you.

a.

1

$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$ $\frac{2}{3} = 2 \times \frac{1}{3}$

b.

1

c.

1

d.

1

COMMON CORE

Lesson 3: Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams.

Date: 10/20/14

engage^ny   5.A.36

2. Write the following fractions greater than 1 as the sum of two products.

a.

1

b.

1
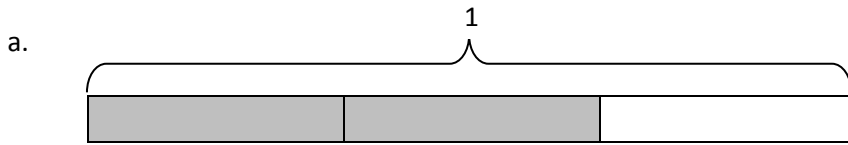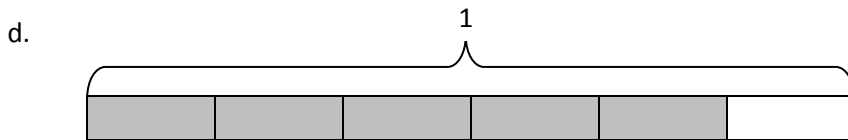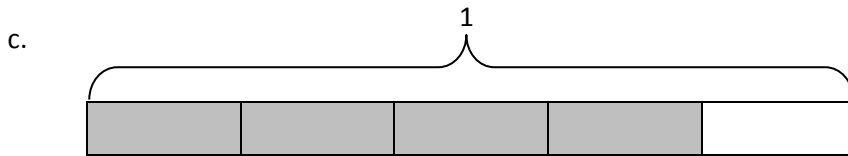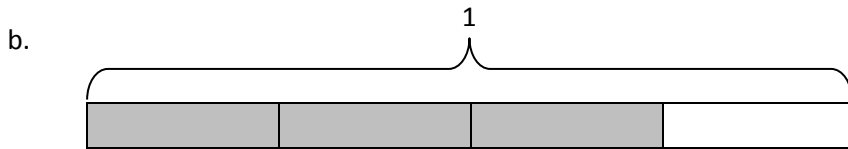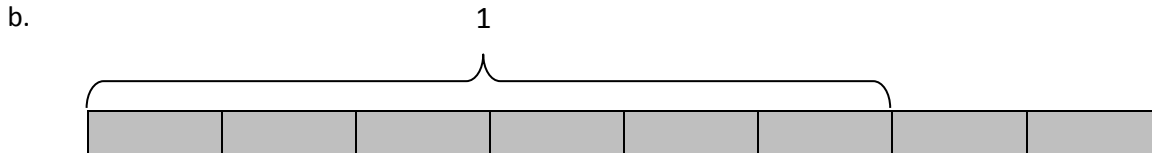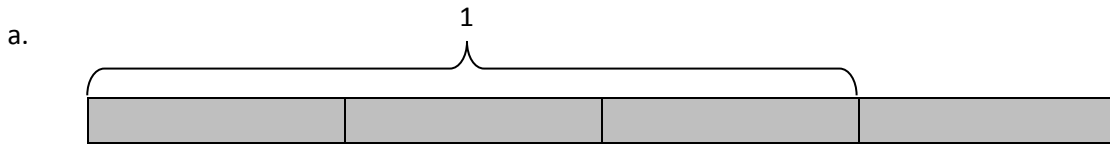
3. Draw a tape diagram and record the given fraction's decomposition into unit fractions as a multiplication sentence.

a. $\frac{3}{5}$

b. $\frac{3}{8}$

c. $\frac{5}{9}$

d. $\frac{8}{5}$

e. $\frac{12}{4}$

COMMON CORE

| Lesson 3: | Decompose non-unit fractions and represent them as a whole number times a unit fraction using tape diagrams. |
| Date: | 10/20/14 |

engage^{ny}

5.A.37

Name _____   Date _____

1. The total length of each tape diagram represents 1. Decompose the shaded unit fractions as the sum of smaller unit fractions in at least two different ways. The first one has been done for you.

   a.

   $\frac{1}{2}$

   $$\frac{1}{2} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

   $\frac{1}{2}$

   $$\frac{1}{2} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$$

   b.

   $\frac{1}{4}$

   $\frac{1}{4}$

2. The total length of each tape diagram represents 1. Decompose the shaded fractions as the sum of smaller unit fractions in at least two different ways.

   a.

   b.

   c.

Lesson 4: Decompose fractions into sums of smaller unit fractions using tape diagrams.

Date: 10/20/14

engage^{ny} **5.A.47**
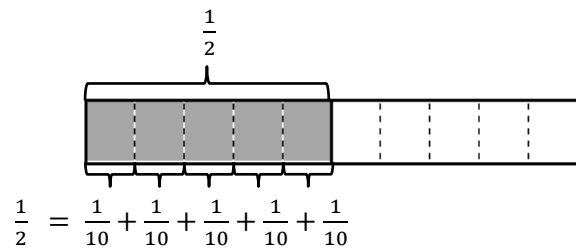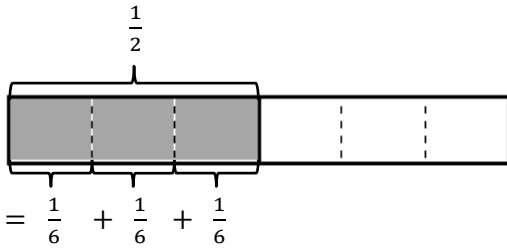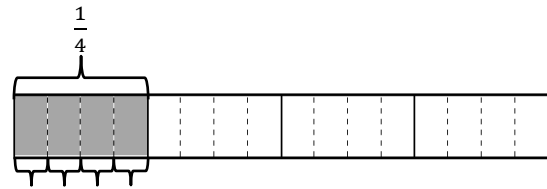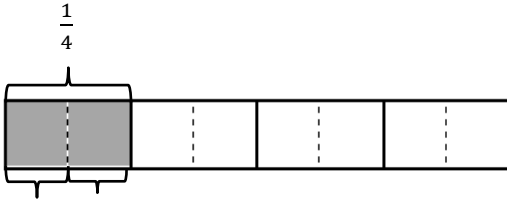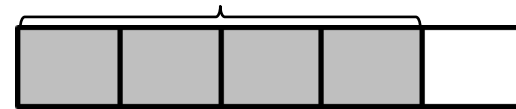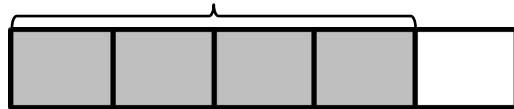
3. Draw tape diagrams to prove the following statements. The first one has been done for you.

a. $\frac{2}{5} = \frac{4}{10}$
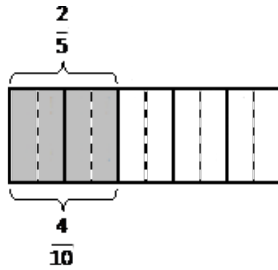
b. $\frac{3}{6} = \frac{6}{12}$

c. $\frac{2}{6} = \frac{6}{18}$

d. $\frac{3}{4} = \frac{12}{16}$

4. Show that $\frac{1}{2}$ is equivalent to $\frac{6}{12}$ using a tape diagram and a number sentence.

5. Show that $\frac{2}{3}$ is equivalent to $\frac{8}{12}$ using a tape diagram and a number sentence.

6. Show that $\frac{4}{5}$ is equivalent to $\frac{12}{15}$ using a tape diagram and a number sentence.

COMMON CORE

Lesson 4:　Decompose fractions into sums of smaller unit fractions using tape diagrams.

Date:　10/20/14

engage^{ny}

5.A.48

Name _____   Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

    a.   3 rows

    $$\frac{1}{2} = \frac{3}{}$$
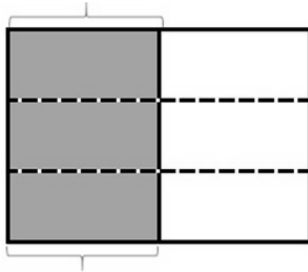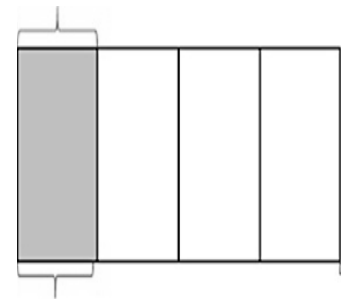
    $$\frac{1}{2} = \frac{1}{6} + \frac{}{} + \frac{}{} = \frac{3}{6}$$

    $$\frac{1}{2} = 3 \times \frac{}{} = \frac{3}{6}$$

    b.   2 rows

    c.   4 rows

2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

a. $\frac{1}{3} = \frac{2}{6}$

b. $\frac{1}{3} = \frac{3}{9}$

c. $\frac{1}{3} = \frac{4}{12}$

d. $\frac{1}{3} = \frac{5}{15}$

e. $\frac{1}{5} = \frac{2}{10}$

f. $\frac{1}{5} = \frac{3}{15}$

3. Explain why $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ is the same as $\frac{1}{3}$.

Name _____   Date _____

1. Each rectangle represents 1. Draw horizontal lines to decompose each rectangle into the fractional units as indicated. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences. The first one has been partially done for you.

   a. Tenths
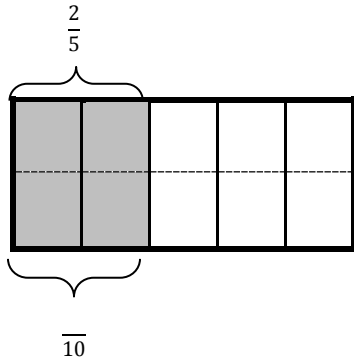
   $\frac{2}{5}$

   $\overline{10}$

   $$\frac{2}{5} = \frac{4}{}$$

   $$\frac{}{5} + \frac{}{5} = \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \frac{4}{}$$

   $$\left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \left(2 \times \frac{}{}\right) + \left(2 \times \frac{}{}\right) = \frac{4}{}$$

   $$\frac{2}{5} = 4 \times \frac{}{} = \frac{4}{}$$

   b. Eighths

   c. Fifteenths
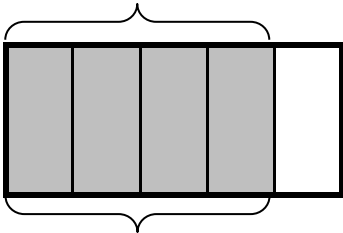
Lesson 6: Decompose fractions using area models to show equivalence.
Date: 10/20/14

engage^ny   5.A.70

2. Draw area models to show the decompositions represented by the number sentences below. Express each as a sum and product of unit fractions. Use parentheses to show the relationship between the number sentences.

   a. $\frac{2}{3} = \frac{4}{6}$

   b. $\frac{4}{5} = \frac{8}{10}$

3. Step 1: Draw an area model for a fraction with units of thirds, fourths, or fifths.

   Step 2: Shade in more than one fractional unit.

   Step 3: Partition the area model again to find an equivalent fraction.

   Step 4: Write the equivalent fractions as a number sentence. (If you have written a number sentence like this one already in this homework, start over.)

Name _____   Date _____

Each rectangle represents 1.

1. The shaded unit fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

    a.

    $$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

    b.

    c.

    d.

2. Decompose the shaded fractions into smaller units using the area models. Express the equivalent fractions in a number sentence using multiplication.

    a.

    b.

    c.

    d.

COMMON CORE

Lesson 7: Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^ny   5.B.12
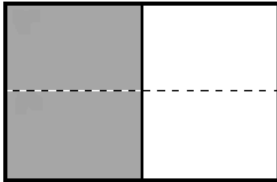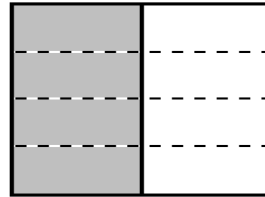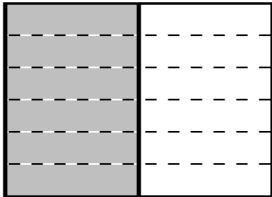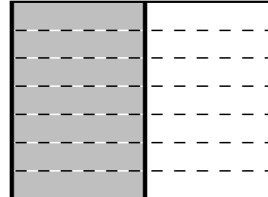
3. Draw three different area models to represent 1 fourth by shading.
    Decompose the shaded fraction into (a) eighths, (b) twelfths, and (c) sixteenths.
    Use multiplication to show how each fraction is equivalent to 1 fourth.

    a.

    b.

    c.

Lesson 7:   Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

5.B.13

Name _____   Date _____

Each rectangle represents 1.

1. The shaded fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.

$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

b.

c.

d.
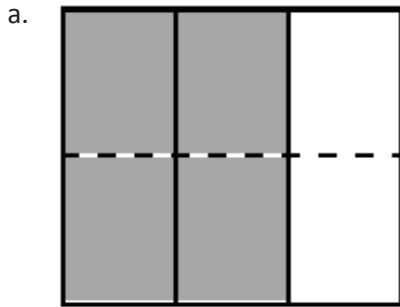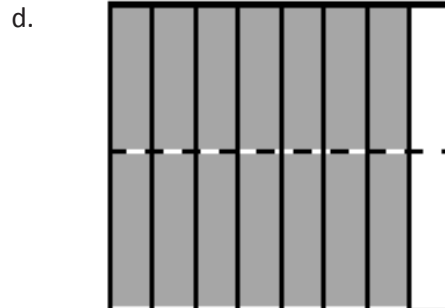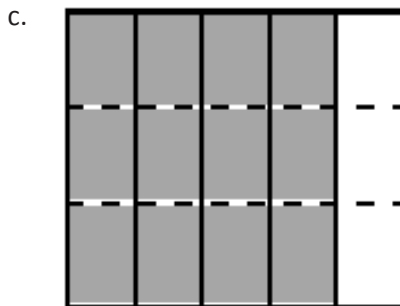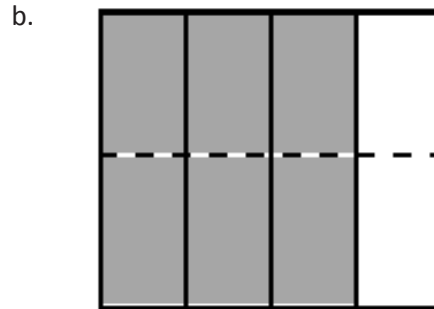
2. Decompose both shaded fractions into twelfths. Express the equivalent fractions in a number sentence using multiplication.

a.

b.

COMMON CORE   Lesson 8:   Use the area model and multiplication to show the equivalence of two fractions.   engage^ny   5.B.23

Date: 10/20/14
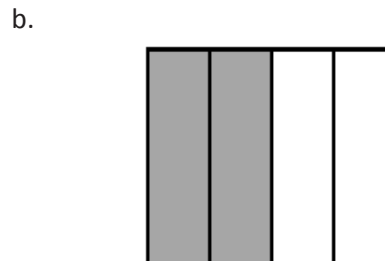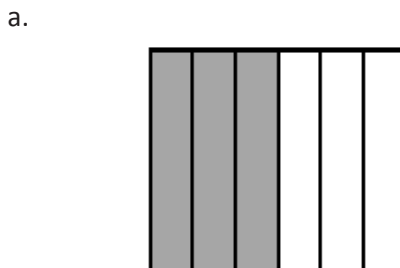
3. Draw area models to prove that the following number sentences are true.

   a. $\frac{1}{3} = \frac{2}{6}$

   b. $\frac{2}{5} = \frac{4}{10}$

   c. $\frac{5}{7} = \frac{10}{14}$

   d. $\frac{3}{6} = \frac{9}{18}$

4. Use multiplication to create an equivalent fraction for each fraction below.

   a. $\frac{2}{3}$

   b. $\frac{5}{6}$

   c. $\frac{6}{5}$

   d. $\frac{10}{8}$

5. Determine which of the following are true number sentences. Correct those that are false by changing the right-hand side of the number sentence.

   a. $\frac{2}{3} = \frac{4}{9}$

   b. $\frac{5}{6} = \frac{10}{12}$

   c. $\frac{3}{5} = \frac{6}{15}$

   d. $\frac{7}{4} = \frac{21}{12}$

COMMON CORE

Lesson 8:   Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}

5.B.24

Name _____　　　Date _____

Each rectangle represents 1.

1. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

   a.

   $$\frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$$

   b.

   c.

   d.

2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

   a.

   b.

   c.

   d.

COMMON CORE	Lesson 9:	Use the area model and division to show the equivalence of two fractions.
	Date:	10/20/14

engage^ny　　5.B.34
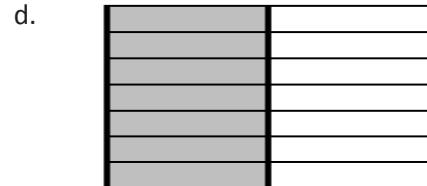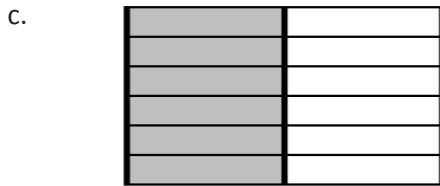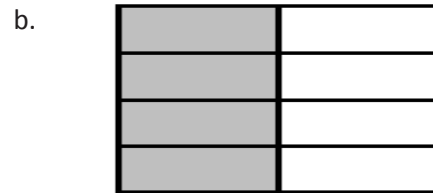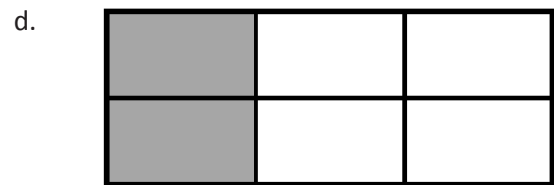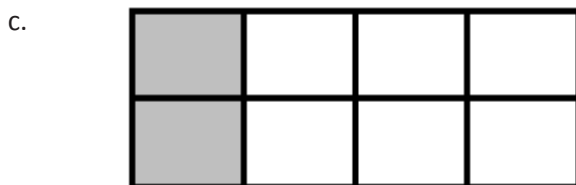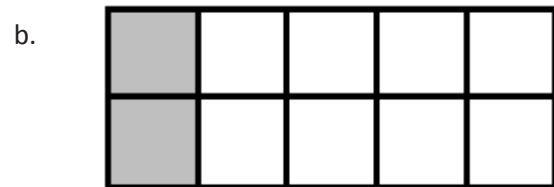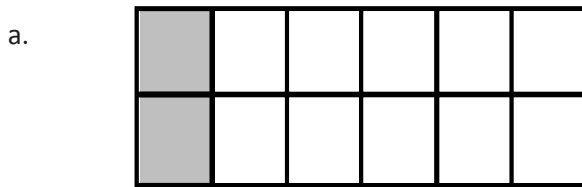
e.   What happened to the size of the fractional units when you composed the fraction?

f.   What happened to the total number of units in the whole when you composed the fraction?

3.   a.   In the first area model, show 4 eighths. In the second area model, show 6 twelfths. Show how both fractions can be composed, or renamed, as the same unit fraction.
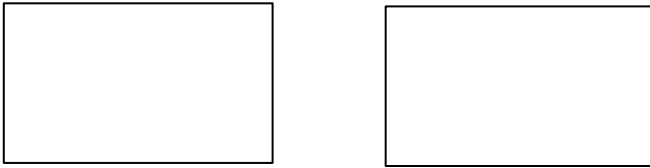
b.   Express the equivalent fractions in a number sentence using division.

4.   a.   In the first area model, show 4 eighths. In the second area model, show 8 sixteenths. Show how both fractions can be composed, or renamed, as the same unit fraction.
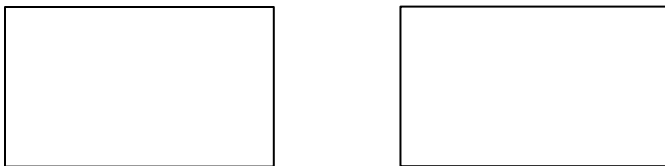
b.   Express the equivalent fractions in a number sentence using division.

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Each rectangle represents 1.

1. Compose the shaded fraction into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

a.

$$\frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

b.

c.

d.

2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

a.

b.

COMMON CORE | **Lesson 10:** Use the area model and division to show the equivalence of two fractions.
Date: 10/20/14

engage^{ny}   **5.B.46**
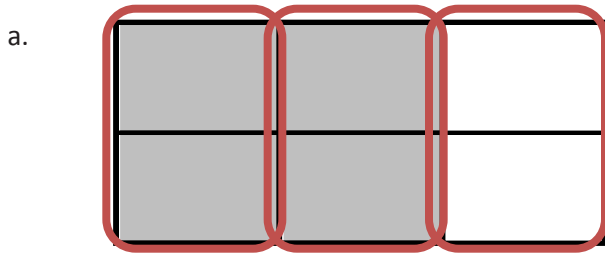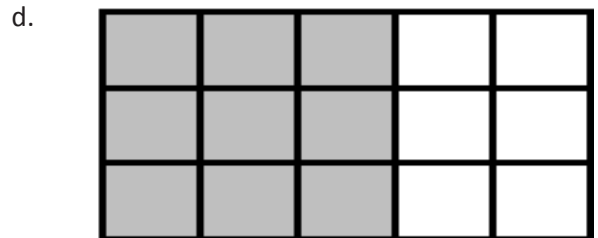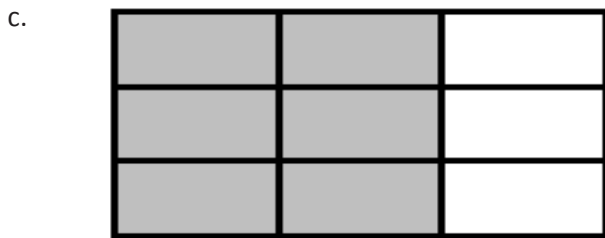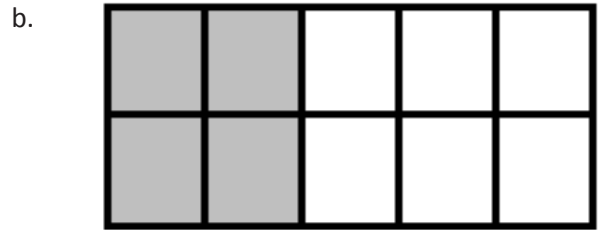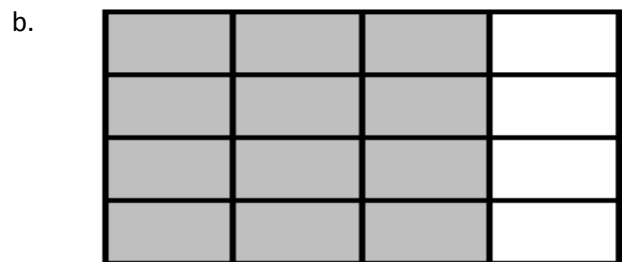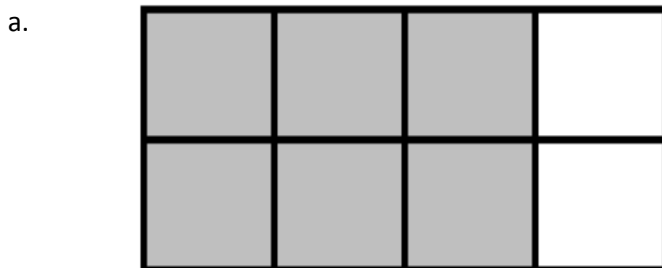
3. Draw an area model to represent each number sentence below.

    a. $\frac{6}{15} = \frac{6 \div 3}{15 \div 3} = \frac{2}{5}$

    b. $\frac{6}{18} = \frac{6 \div 3}{18 \div 3} = \frac{2}{6}$

4. Use division to rename each fraction given below. Draw a model if that helps you. See if you can use the largest common factor.

    a. $\frac{8}{10}$

    b. $\frac{9}{12}$

    c. $\frac{8}{12}$

    d. $\frac{12}{18}$

Lesson 10:   Use the area model and division to show the equivalence of two fractions.

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engage^ny   5.B.47

Name _____   Date _____

1. Label each number line with the fractions shown on the tape diagram. Circle the fraction that labels the point on the number line that also names the selected part of the tape diagram.

    a.

    b.

    c.

2. Write number sentences using multiplication to show:

    a. The fraction represented in 1(a) is equivalent to the fraction represented in 1(b).

    b. The fraction represented in 1(a) is equivalent to the fraction represented in 1(c).

COMMON CORE

Lesson 11: Explain fraction equivalence using a tape diagram and the number line, and relate that to the use of multiplication and division.

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engage**ny**

5.B.57

3. Use each shaded tape diagram below as a ruler to draw a number line. Mark each number line with the fractional units shown on the tape diagram, and circle the fraction that labels the point on the number line that also names the selected part of the tape diagram.

   a.

   1

   b.

   1

   c.

   1

4. Write a number sentence using division to show the fraction represented in 3(a) is equivalent to the fraction represented in 3(b).

5. a. Partition a number line from 0 to 1 into fourths. Decompose $\frac{3}{4}$ into 6 equal lengths.

   b. Write a number sentence using multiplication to show what fraction represented on the number line is equivalent to $\frac{3}{4}$.

   c. Write a number sentence using division to show what fraction represented on the number line is equivalent to $\frac{3}{4}$.

COMMON CORE | **Lesson 11:** Explain fraction equivalence using a tape diagram and the number line, and relate that to the use of multiplication and division. engage^ny 5.B.58

Date: 10/20/14

Name _____   Date _____

1.

a. Plot the following points on the number line without measuring.

     i. $\frac{2}{3}$ ii. $\frac{1}{6}$ iii. $\frac{4}{10}$
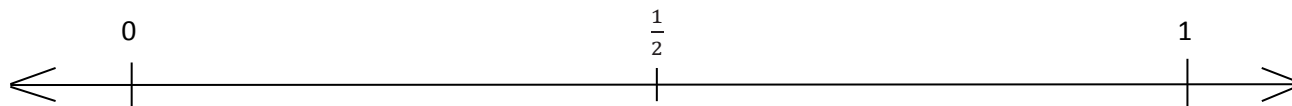
b. Use the number line in Part (a) to compare the fractions by writing >, <, or = on the lines.

     i. $\frac{2}{3}$ _____ $\frac{1}{2}$ ii. $\frac{4}{10}$ _____ $\frac{1}{6}$

2.

a. Plot the following points on the number line without measuring.

     i. $\frac{5}{12}$ ii. $\frac{3}{4}$ iii. $\frac{2}{6}$
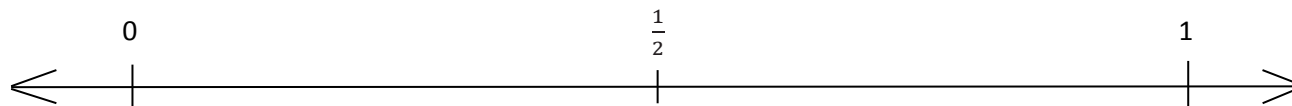
b. Select two fractions from Part (a), and use the given number line to compare them by writing >, <, or =.

c. Explain how you plotted the points in Part (a).

3. Compare the fractions given below by writing > or < on the lines.

   Give a brief explanation for each answer referring to the benchmark of 0, $\frac{1}{2}$, and 1.

   a. $\frac{1}{2}$ ——————— $\frac{1}{4}$

   b. $\frac{6}{8}$ ——————— $\frac{1}{2}$

   c. $\frac{3}{4}$ ——————— $\frac{3}{5}$

   d. $\frac{4}{6}$ ——————— $\frac{9}{12}$

   e. $\frac{2}{3}$ ——————— $\frac{1}{4}$

   f. $\frac{4}{5}$ ——————— $\frac{8}{12}$

   g. $\frac{1}{3}$ ——————— $\frac{3}{6}$

   h. $\frac{7}{8}$ ——————— $\frac{3}{5}$

   i. $\frac{51}{100}$ ——————— $\frac{5}{10}$

   j. $\frac{8}{14}$ ——————— $\frac{49}{100}$

COMMON CORE

Lesson 12: Reason using benchmarks to compare two fractions on the number line.

Date: 10/20/14

engage^ny

5.C.13

Name _____   Date _____

1. Place the following fractions on the number line given.

    a. $\frac{3}{2}$ b. $\frac{9}{5}$ c. $\frac{14}{10}$

    ```
    1                          1 1/2                        2
    ←——|————————————————————————|————————————————————————|——→
    ```
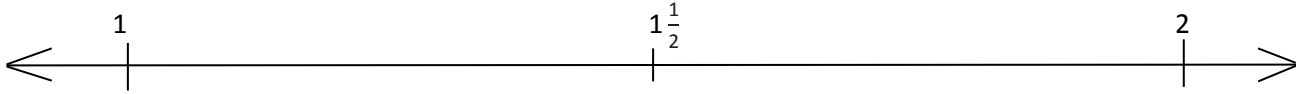
2. Use the number line in Problem 1 to compare the fractions by writing >, <, or = on the lines:

    a. $1\frac{1}{6}$ _____ $1\frac{4}{12}$ b. $1\frac{1}{2}$ _____ $1\frac{4}{5}$

3. Place the following fractions on the number line given.

    a. $\frac{12}{9}$ b. $\frac{6}{5}$ c. $\frac{18}{15}$
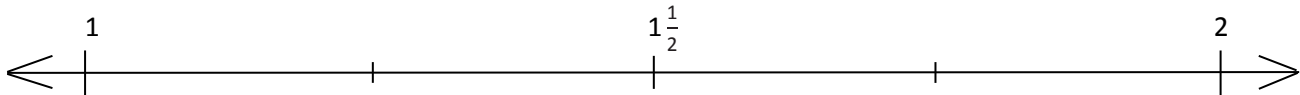
    ```
    1                          1 1/2                        2
    ←——|————————————|————————————|————————————|————————————|——→
    ```

4. Use the number line in Problem 3 to explain the reasoning you used when determining whether $\frac{12}{9}$ or $\frac{18}{15}$ was greater.

COMMON CORE | **Lesson 13:** Reason using benchmarks to compare two fractions on the number line.
Date: 10/20/14

engage^ny   **5.C.25**

5. Compare the fractions given below by writing > or < on the lines.
   Give a brief explanation for each answer referring to benchmarks.

   a. $\dfrac{2}{5}$ _____ $\dfrac{6}{8}$

   b. $\dfrac{6}{10}$ _____ $\dfrac{5}{6}$

   c. $\dfrac{6}{4}$ _____ $\dfrac{7}{8}$

   d. $\dfrac{1}{4}$ _____ $\dfrac{8}{12}$

   e. $\dfrac{14}{12}$ _____ $\dfrac{11}{6}$

   f. $\dfrac{8}{9}$ _____ $\dfrac{3}{2}$

   g. $\dfrac{7}{8}$ _____ $\dfrac{11}{10}$

   h. $\dfrac{3}{4}$ _____ $\dfrac{4}{3}$

   i. $\dfrac{3}{8}$ _____ $\dfrac{3}{2}$

   j. $\dfrac{9}{6}$ _____ $\dfrac{16}{12}$

COMMON CORE

Lesson 13: Reason using benchmarks to compare two fractions on the number line.
Date: 10/20/14

engage^ny 5.C.26

Name _____   Date _____

1. Compare the pairs of fractions by reasoning about the size of the units. Use >, <, or =.

   a. 1 third _____ 1 sixth

   b. 2 halves _____ 2 thirds

   c. 2 fourths _____ 2 sixths

   d. 5 eighths _____ 5 tenths

2. Compare by reasoning about the following pairs of fractions with the same or related numerators. Use >, <, or =. Explain your thinking using words, pictures, or numbers. Problem 2(b) has been done for you.

   a. $\frac{3}{6}$ _____ $\frac{3}{7}$

   b. $\frac{2}{5} < \frac{4}{9}$

   because $\frac{2}{5} = \frac{4}{10}$

   4 tenths is less

   than 4 ninths because

   tenths are smaller than ninths.
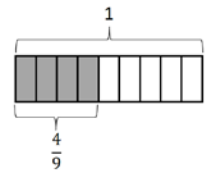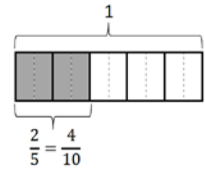
   c. $\frac{3}{11}$ _____ $\frac{3}{13}$

   d. $\frac{5}{7}$ _____ $\frac{10}{13}$

3. Draw two tape diagrams to model each pair of the following fractions with related denominators. Use >, <, or = to compare.

   a. $\frac{3}{4}$ _____ $\frac{7}{12}$

   b. $\frac{2}{4}$ _____ $\frac{1}{8}$

   c. $1\frac{4}{10}$ _____ $1\frac{3}{5}$

4. Draw one number line to model each pair of fractions with related denominators. Use >, <, or = to compare.

   a. $\frac{3}{4}$ —————— $\frac{5}{8}$

   b. $\frac{11}{12}$ —————— $\frac{3}{4}$

   c. $\frac{4}{5}$ —————— $\frac{7}{10}$

   d. $\frac{8}{9}$ —————— $\frac{2}{3}$

5. Compare each pair of fractions using >, <, or =. Draw a model if you choose to.

   a. $\frac{1}{7}$ —————— $\frac{2}{7}$

   b. $\frac{5}{7}$ —————— $\frac{11}{14}$

   c. $\frac{7}{10}$ —————— $\frac{3}{5}$

   d. $\frac{2}{3}$ —————— $\frac{9}{15}$

   e. $\frac{3}{4}$ —————— $\frac{9}{12}$

   f. $\frac{5}{3}$ —————— $\frac{5}{2}$

   g. $\frac{4}{3}$ —————— $1\frac{2}{9}$
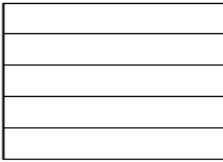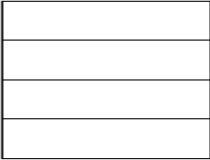
   h. $1\frac{1}{3}$ —————— $\frac{9}{7}$

6. Simon claims $\frac{4}{9}$ is greater than $\frac{1}{3}$. Ted thinks $\frac{4}{9}$ is less than $\frac{1}{3}$. Who is correct? Support your answer with a picture.

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engage^{ny}

5.C.40

Name _____   Date _____

1. Draw an area model for each pair of fractions, and use it to compare the two fractions by writing >, <, or = on the line. The first two have been partially done for you. Each rectangle represents 1.

a. $\frac{1}{2}$ ____<____ $\frac{3}{5}$

$\frac{1\times5}{2\times5} = \frac{5}{10}$ $\frac{3\times2}{5\times2} = \frac{6}{10}$

$\frac{5}{10} < \frac{6}{10}$ so $\frac{1}{2} < \frac{3}{5}$

b. $\frac{2}{3}$ _____ $\frac{3}{4}$

c. $\frac{4}{6}$ _____ $\frac{5}{8}$

d. $\frac{2}{7}$ _____ $\frac{3}{5}$

e. $\frac{4}{6}$ _____ $\frac{6}{9}$

f. $\frac{4}{5}$ _____ $\frac{5}{6}$

2. Rename the fractions, as needed, using multiplication in order to compare each pair of fractions by writing >, <, or =.

    a. $\frac{2}{3}$ _____ $\frac{2}{4}$

    b. $\frac{4}{7}$ _____ $\frac{1}{2}$

    c. $\frac{5}{4}$ _____ $\frac{9}{8}$

    d. $\frac{8}{12}$ _____ $\frac{5}{8}$

3. Use any method to compare the fractions. Record your answer using >, <, or =.

    a. $\frac{8}{9}$ _____ $\frac{2}{3}$

    b. $\frac{4}{7}$ _____ $\frac{4}{5}$

    c. $\frac{3}{2}$ _____ $\frac{9}{6}$

    d. $\frac{11}{7}$ _____ $\frac{5}{3}$

4. Explain which method you prefer using to compare fractions. Provide an example using words, pictures, or numbers.

COMMON CORE

Lesson 15: Find common units or number of units to compare two fractions.
Date: 10/20/14

engage^{ny}

5.C.51

Name _____   Date _____

1. Solve.

   a. 3 sixths – 2 sixths = _____

   b. 5 tenths – 3 tenths = _____

   c. 3 fourths – 2 fourths = _____

   d. 5 thirds – 2 thirds = _____

2. Solve.

   a. $\frac{3}{5} - \frac{2}{5}$

   b. $\frac{7}{9} - \frac{3}{9}$

   c. $\frac{7}{12} - \frac{3}{12}$

   d. $\frac{6}{6} - \frac{4}{6}$

   e. $\frac{5}{3} - \frac{2}{3}$

   f. $\frac{7}{4} - \frac{5}{4}$

3. Solve. Use a number bond to decompose the difference. Record your final answer as a mixed number. Problem (a) has been completed for you.

   a. $\frac{12}{6} - \frac{3}{6} = \frac{9}{6} = 1\frac{3}{6}$

   $\frac{6}{6}$ $\frac{3}{6}$

   b. $\frac{17}{8} - \frac{6}{8}$

   c. $\frac{9}{5} - \frac{3}{5}$

   d. $\frac{11}{4} - \frac{6}{4}$

   e. $\frac{10}{7} - \frac{2}{7}$

   f. $\frac{21}{10} - \frac{9}{10}$

COMMON CORE

Lesson 16:   Use visual models to add and subtract two fractions with the same units.
Date: 10/20/14

engageny   **5.D.13**

4. Solve. Write the sum in unit form.

   a. 4 fifths + 2 fifths = _____

   b. 5 eighths + 2 eighths = _____

5. Solve.

   a. $\frac{3}{11} + \frac{6}{11}$

   b. $\frac{3}{10} + \frac{6}{10}$

6. Solve. Use a number bond to decompose the sum. Record your final answer as a mixed number.

   a. $\frac{3}{4} + \frac{3}{4}$

   b. $\frac{8}{12} + \frac{6}{12}$

   c. $\frac{5}{8} + \frac{7}{8}$

   d. $\frac{8}{10} + \frac{5}{10}$

   e. $\frac{3}{5} + \frac{6}{5}$

   f. $\frac{4}{3} + \frac{2}{3}$

7. Solve. Use a number line to model your answer.

   a. $\frac{11}{9} - \frac{5}{9}$

   b. $\frac{13}{12} + \frac{4}{12}$

Name _____   Date _____

1. Use the following three fractions to write two subtraction and two addition number sentences.

a. $\frac{5}{6}, \frac{4}{6}, \frac{9}{6}$	b. $\frac{5}{9}, \frac{13}{9}, \frac{8}{9}$

2. Solve. Model each subtraction problem with a number line, and solve by both counting up and subtracting.

a. $1 - \frac{5}{8}$

b. $1 - \frac{2}{5}$

c. $1\frac{3}{6} - \frac{5}{6}$

d. $1 - \frac{1}{4}$

e. $1\frac{1}{3} - \frac{2}{3}$

f. $1\frac{1}{5} - \frac{2}{5}$

COMMON CORE

Lesson 17: Use visual models to add and subtract two fractions with the same units, including subtracting from one whole.

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engage^{ny} 5.D.26

3. Find the difference in two ways. Use number bonds to decompose the total. Part (a) has been completed for you.

a. $1\frac{2}{5} - \frac{4}{5}$

$$\frac{5}{5} + \frac{2}{5} = \frac{7}{5}$$

$$\frac{7}{5} - \frac{4}{5} = \boxed{\frac{3}{5}}$$

$$\frac{5}{5} - \frac{4}{5} = \frac{1}{5}$$

$$\frac{1}{5} + \frac{2}{5} = \boxed{\frac{3}{5}}$$

b. $1\frac{3}{8} - \frac{7}{8}$

c. $1\frac{1}{4} - \frac{3}{4}$

d. $1\frac{2}{7} - \frac{5}{7}$

e. $1\frac{3}{10} - \frac{7}{10}$

COMMON CORE

Lesson 17: Use visual models to add and subtract two fractions with the same units, including subtracting from one whole.

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engage^{ny}

5.D.27

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Name _____   Date _____

1. Show one way to solve each problem. Express sums and differences as a mixed number when possible. Use number bonds when it helps you. Part (a) is partially completed.

a. $\frac{1}{3} + \frac{2}{3} + \frac{1}{3}$
 	
   $= \frac{3}{3} + \frac{1}{3} = 1 + \frac{1}{3}$
 	
   $=$ _____
	b. $\frac{5}{8} + \frac{5}{8} + \frac{3}{8}$	c. $\frac{4}{6} + \frac{6}{6} + \frac{1}{6}$

d. $1\frac{2}{12} - \frac{2}{12} - \frac{1}{12}$	e. $\frac{5}{7} + \frac{1}{7} + \frac{4}{7}$	f. $\frac{4}{10} + \frac{7}{10} + \frac{9}{10}$
g. $1 - \frac{3}{10} - \frac{1}{10}$	h. $1\frac{3}{5} - \frac{4}{5} - \frac{1}{5}$	i. $\frac{10}{15} + \frac{7}{15} + \frac{12}{15} + \frac{1}{15}$

2. Bonnie used two different strategies to solve $\frac{5}{10} + \frac{4}{10} + \frac{3}{10}$.

Bonnie's First Strategy

$$\frac{5}{10} + \frac{4}{10} + \frac{3}{10} = \frac{9}{10} + \frac{3}{10} = \frac{10}{10} + \frac{2}{10} = 1\frac{2}{10}$$

$$\frac{1}{10} \quad \frac{2}{10}$$

Bonnie's Second Strategy

$$\frac{5}{10} + \frac{4}{10} + \frac{3}{10} = \frac{12}{10} = 1 + \frac{2}{10} = 1\frac{2}{10}$$

$$\frac{10}{10} \quad \frac{2}{10}$$

Which strategy do you like best? Why?

3. You gave one solution for each part of Problem 1. Now, for each problem indicated below, give a different solution method.

1(b) $\frac{5}{8} + \frac{5}{8} + \frac{3}{8}$

1(e) $\frac{5}{7} + \frac{1}{7} + \frac{4}{7}$

1(h) $1\frac{3}{5} - \frac{4}{5} - \frac{1}{5}$

COMMON CORE

Lesson 18: Add and subtract more than two fractions.
Date: 10/20/14

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5.D.40

Name _____   Date _____

Use the RDW process to solve.

1. Isla walked $\frac{3}{4}$ mile each way to and from school on Wednesday. How many miles did Isla walk that day?

2. Zach spent $\frac{2}{3}$ hour reading on Friday and $1\frac{1}{3}$ hours reading on Saturday. How much more time did he read on Saturday than on Friday?

3. Mrs. Cashmore bought a large melon. She cut a piece that weighed $1\frac{1}{8}$ pounds and gave it to her neighbor. The remaining piece of melon weighed $\frac{6}{8}$ pound. How much did the whole melon weigh?

4. Ally's little sister wanted to help her make some oatmeal cookies. First, she put $\frac{5}{8}$ cup of oatmeal in the bowl. Next, she added another $\frac{5}{8}$ cup of oatmeal. Finally, she added another $\frac{5}{8}$ cup of oatmeal. How much oatmeal did she put in the bowl?

5. Marcia baked 2 pans of brownies. Her family ate $1\frac{5}{6}$ pans. What fraction of a pan of brownies was left?

6. Joanie wrote a letter that was $1\frac{1}{4}$ pages long. Katie wrote a letter that was $\frac{3}{4}$ page shorter than Joanie's letter. How long was Katie's letter?

Name _____   Date _____

1. Use a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write the complete number sentence.

a. $\frac{1}{3} + \frac{1}{6}$

b. $\frac{1}{2} + \frac{1}{4}$

c. $\frac{3}{4} + \frac{1}{8}$

d. $\frac{1}{4} + \frac{5}{12}$

e. $\frac{3}{8} + \frac{1}{2}$

f. $\frac{3}{5} + \frac{3}{10}$

COMMON CORE

Lesson 20: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

engage^{ny}

5.D.64

2. Estimate to determine if the sum is between 0 and 1 or 1 and 2. Draw a number line to model the addition. Then, write a complete number sentence. The first one has been completed for you.

a. $\frac{1}{3} + \frac{1}{6}$ $\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$

b. $\frac{3}{5} + \frac{7}{10}$
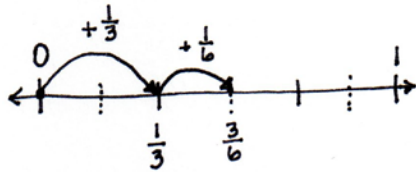
c. $\frac{5}{12} + \frac{1}{4}$

d. $\frac{3}{4} + \frac{5}{8}$

e. $\frac{7}{8} + \frac{3}{4}$

f. $\frac{1}{6} + \frac{5}{3}$

3. Solve the following addition problem without drawing a model. Show your work.

$$\frac{5}{6} + \frac{1}{3}$$

COMMON CORE

Lesson 20:   Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.

Date: 10/20/14

engage^{ny}

5.D.65

Name _____   Date _____

1. Draw a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

   a. $\frac{7}{8} + \frac{1}{4}$ b. $\frac{4}{8} + \frac{2}{4}$

   c. $\frac{4}{6} + \frac{1}{2}$ d. $\frac{3}{5} + \frac{8}{10}$

2. Draw a number line to model the addition. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

   a. $\frac{1}{2} + \frac{5}{8}$ b. $\frac{3}{4} + \frac{3}{8}$

COMMON CORE | **Lesson 21:**   Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.   **engage**^ny   **5.D.76**

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c. $\dfrac{4}{10} + \dfrac{4}{5}$

d. $\dfrac{1}{3} + \dfrac{5}{6}$

3. Solve. Write the sum as a mixed number. Draw a model if needed.

a. $\dfrac{1}{2} + \dfrac{6}{8}$

b. $\dfrac{7}{8} + \dfrac{3}{4}$

c. $\dfrac{5}{6} + \dfrac{1}{3}$

d. $\dfrac{9}{10} + \dfrac{2}{5}$

e. $\dfrac{4}{12} + \dfrac{3}{4}$

f. $\dfrac{1}{2} + \dfrac{5}{6}$

g. $\dfrac{3}{12} + \dfrac{5}{6}$

h. $\dfrac{7}{10} + \dfrac{4}{5}$

COMMON CORE   **Lesson 21:**   Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

engage^ny   5.D.77

Name _____   Date _____

1. Draw a tape diagram to match each number sentence. Then, complete the number sentence.

   a. $2 + \frac{1}{4} =$ _____

   b. $3 + \frac{2}{3} =$ _____

   c. $2 - \frac{1}{5} =$ _____

   d. $3 - \frac{3}{4} =$ _____

2. Use the following three numbers to write two subtraction and two addition number sentences.

   a. $4, \ 4\frac{5}{8}, \frac{5}{8}$

   b. $\frac{2}{7}, \ 5\frac{5}{7}, \ 6$

3. Solve using a number bond. Draw a number line to represent each number sentence. The first one has been done for you.

   a. $4 - \frac{1}{3} = \ 3\frac{2}{3}$

   b. $8 - \frac{5}{6} =$ _____
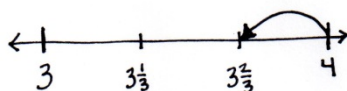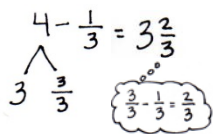
c. $7 - \frac{4}{5} = $ _____

d. $3 - \frac{3}{10} = $ _____

4. Complete the subtraction sentences using number bonds.

a. $6 - \frac{1}{4} = $ _____

b. $7 - \frac{2}{10} = $ _____

c. $5 - \frac{5}{6} = $ _____

d. $6 - \frac{6}{8} = $ _____

e. $3 - \frac{7}{8} = $ _____

f. $26 - \frac{7}{10} = $ _____

COMMON CORE

Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.

Date: 10/20/14

engage^{ny}

5.E.16

Name _____   Date _____

1. Circle any fractions that are equivalent to a whole number. Record the whole number below the fraction.

   a. Count by 1 fourths. Start at 0 fourths. Stop at 6 fourths.

   $\frac{0}{4}$, $\frac{1}{4}$,

   0

   b. Count by 1 sixths. Start at 0 sixths. Stop at 14 sixths.

2. Use parentheses to show how to make ones in the following number sentence.

$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 4$$

3. Multiply, as shown below. Draw a number line to support your answer.
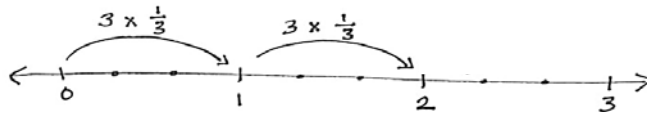
   a. $6 \times \frac{1}{3}$

$$6 \times \frac{1}{3} = 2 \times \frac{3}{3} = 2$$

   b. $10 \times \frac{1}{2}$

   c. $8 \times \frac{1}{4}$

COMMON CORE

Lesson 23:   Add and multiply unit fractions to build fractions greater than 1 using visual models.
Date: 10/20/14

engage^{ny}   5.E.27

4. Multiply, as shown below. Write the product as a mixed number. Draw a number line to support your answer.

   a. 7 copies of 1 third
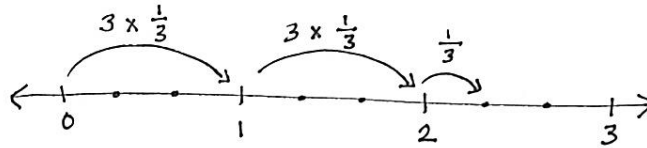
$$7 \times \frac{1}{3} = \left(2 \times \frac{3}{3}\right) + \frac{1}{3} = 2 + \frac{1}{3} = 2\frac{1}{3}$$

   b. 7 copies of 1 fourth

   c. 11 groups of 1 fifth

   d. $7 \times \frac{1}{2}$

   e. $9 \times \frac{1}{5}$

COMMON CORE

Lesson 23: Add and multiply unit fractions to build fractions greater than 1 using visual models.

Date: 10/20/14

engage^{ny}

5.E.28

Name _____   Date _____

1. Rename each fraction as a mixed number by decomposing it into two parts as shown below. Model the decomposition with a number line and a number bond.

a. $\frac{11}{3}$

$$\frac{11}{3} = \frac{9}{3} + \frac{2}{3} = 3 + \frac{2}{3} = 3\frac{2}{3}$$

b. $\frac{13}{4}$

c. $\frac{16}{5}$

d. $\frac{15}{2}$

e. $\frac{17}{3}$

![COMMON CORE] Lesson 24: Decompose and compose fractions greater than 1 to express them in various forms.

Date: 10/20/14

engage^ny   5.E.38
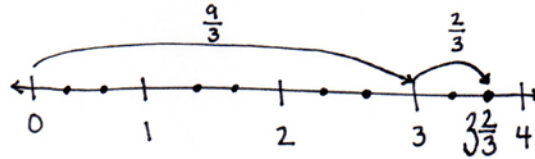
2.　Convert each fraction to a mixed number. Show your work as in the example. Model with a number line.

a.　$\frac{11}{3}$

$$\frac{11}{3} = \frac{3 \times 3}{3} + \frac{2}{3} = 3 + \frac{2}{3} = 3\frac{2}{3}$$
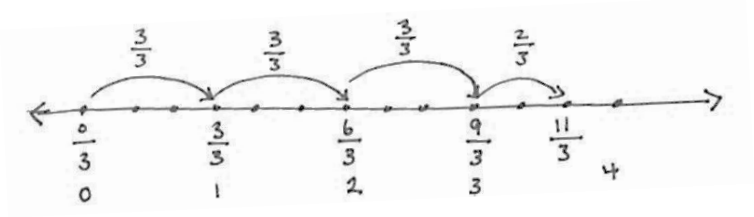
b.　$\frac{13}{2}$

c.　$\frac{18}{4}$

3.　Convert each fraction to a mixed number.

a.　$\frac{14}{3}$ =	b.　$\frac{17}{4}$ =	c.　$\frac{27}{5}$ =
d.　$\frac{28}{6}$ =	e.　$\frac{23}{7}$ =	f.　$\frac{37}{8}$ =
g.　$\frac{51}{9}$ =	h.　$\frac{74}{10}$ =	i.　$\frac{45}{12}$ =

COMMON CORE

Lesson 24:　Decompose and compose fractions greater than 1 to express them in various forms.

Date:　10/20/14

engage^{ny}　**5.E.39**

Name _____   Date _____

1. Convert each mixed number to a fraction greater than 1. Draw a number line to model your work.

   a. $3\frac{1}{4}$
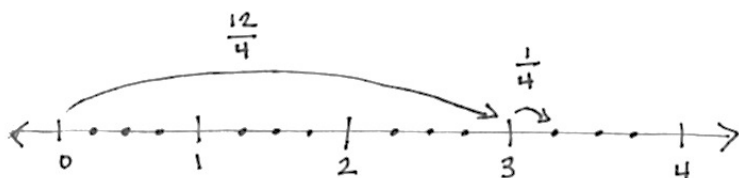
   $3\frac{1}{4} = 3 + \frac{1}{4} = \frac{12}{4} + \frac{1}{4} = \frac{13}{4}$

   b. $4\frac{2}{5}$

   c. $5\frac{3}{8}$

   d. $3\frac{7}{10}$

   e. $6\frac{2}{9}$

COMMON CORE | Lesson 25: Decompose and compose fractions greater than 1 to express them in various forms.
Date: 10/20/14

engage^{ny} 5.E.49

2. Convert each mixed number to a fraction greater than 1. Show your work as in the example.
   (Note: $3 \times \frac{4}{4} = \frac{3 \times 4}{4}$)

   a. $3\frac{3}{4}$

   $$3\frac{3}{4} = 3 + \frac{3}{4} = \left(3 \times \frac{4}{4}\right) + \frac{3}{4} = \frac{12}{4} + \frac{3}{4} = \frac{15}{4}$$

   b. $5\frac{2}{3}$

   c. $4\frac{1}{5}$

   d. $3\frac{7}{8}$

3. Convert each mixed number to a fraction greater than 1.

a. $2\frac{1}{3}$	b. $2\frac{3}{4}$	c. $3\frac{2}{5}$
d. $3\frac{1}{6}$	e. $4\frac{5}{12}$	f. $4\frac{2}{5}$
g. $4\frac{1}{10}$	h. $5\frac{1}{5}$	i. $5\frac{5}{6}$
j. $6\frac{1}{4}$	k. $7\frac{1}{2}$	l. $7\frac{11}{12}$

Name _____   Date _____

1.

   a. Plot the following points on the number line without measuring.

     i. $2\frac{1}{6}$ ii. $3\frac{3}{4}$ iii. $\frac{33}{9}$

         2   3   4
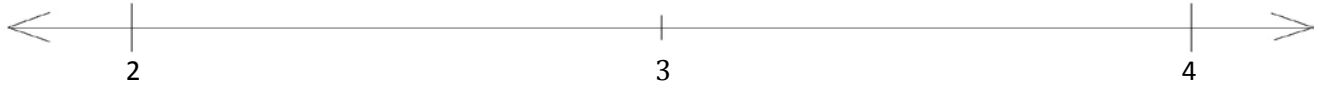
   b. Use the number line in Problem 1(a) to compare the fractions by writing >, <, or =.

     i. $\frac{33}{9}$ _____ $2\frac{1}{6}$ ii. $\frac{33}{9}$ _____ $3\frac{3}{4}$

2.

   a. Plot the following points on the number line without measuring.

     i. $\frac{65}{8}$ ii. $8\frac{5}{6}$ iii. $\frac{29}{4}$

         7   8   9
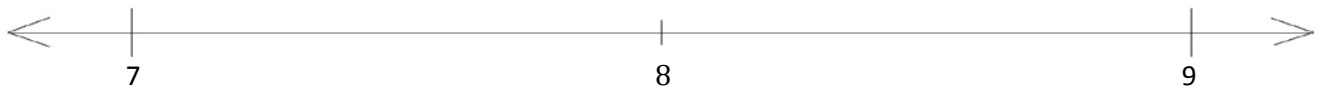
   b. Compare the following by writing >, <, or =.

     i. $8\frac{5}{6}$ _____ $\frac{65}{8}$ ii. $\frac{29}{4}$ _____ $\frac{65}{8}$

   c. Explain how you plotted the points in Problem 2(a).

3. Compare the fractions given below by writing >, <, or =. Give a brief explanation for each answer, referring to benchmark fractions.

a. $5\frac{1}{3}$ _____ $5\frac{3}{4}$

b. $\frac{12}{4}$ _____ $\frac{25}{8}$

c. $\frac{18}{6}$ _____ $\frac{17}{4}$

d. $5\frac{3}{5}$ _____ $5\frac{5}{10}$

e. $6\frac{3}{4}$ _____ $6\frac{3}{5}$

f. $\frac{33}{6}$ _____ $\frac{34}{7}$

g. $\frac{23}{10}$ _____ $\frac{20}{8}$

h. $\frac{27}{12}$ _____ $\frac{15}{6}$

i. $2\frac{49}{50}$ _____ $2\frac{99}{100}$

j. $6\frac{5}{9}$ _____ $6\frac{49}{100}$

COMMON CORE

Lesson 26: Compare fractions greater than 1 by reasoning using benchmark fractions.
Date: 10/20/14

engage^{ny}

5.E.61

Name _____ Date _____

1. Draw a tape diagram to model each comparison. Use >, <, or = to compare.

   a. $2\frac{3}{4}$ _____ $2\frac{7}{8}$

   b. $10\frac{2}{6}$ _____ $10\frac{1}{3}$

   c. $5\frac{3}{8}$ _____ $5\frac{1}{4}$

   d. $2\frac{5}{9}$ _____ $\frac{21}{3}$

2. Use an area model to make like units. Then, use >, <, or = to compare.

   a. $2\frac{4}{5}$ _____ $\frac{11}{4}$

   b. $2\frac{3}{5}$ _____ $2\frac{2}{3}$

3. Compare each pair of fractions using >, <, or = using any strategy.

a. $6\frac{1}{2}$ _____ $6\frac{3}{8}$

b. $7\frac{5}{6}$ _____ $7\frac{11}{12}$

c. $3\frac{6}{10}$ _____ $3\frac{2}{5}$

d. $2\frac{2}{5}$ _____ $2\frac{8}{15}$

e. $\frac{10}{3}$ _____ $\frac{10}{4}$

f. $\frac{12}{4}$ _____ $\frac{10}{3}$

g. $\frac{38}{9}$ _____ $4\frac{2}{12}$

h. $\frac{23}{4}$ _____ $5\frac{2}{3}$

i. $\frac{30}{8}$ _____ $3\frac{7}{12}$

j. $10\frac{3}{4}$ _____ $10\frac{4}{6}$

engage^ny   5.E.73

Name _____   Date _____

1. A group of children measured the lengths of their shoes.
   The measurements are shown in the table. Make a line plot to
   display the data.

Students	Length of Shoe (in inches)
Collin	$8\frac{1}{2}$
Dickon	$7\frac{3}{4}$
Ben	$7\frac{1}{2}$
Martha	$7\frac{3}{4}$
Lilias	8
Susan	$8\frac{1}{2}$
Frances	$7\frac{3}{4}$
Mary	$8\frac{3}{4}$

2. Solve each problem.

   a. Who has a shoe length 1 inch longer than Dickon?

   b. Who has a shoe length 1 inch shorter than Susan?

engage^ny   **5.E.82**

c. How many quarter inches long is Martha's shoe length?

d. What is the difference, in inches, between Lilias's and Martha's shoe lengths?

e. Compare the shoe length of Ben and Frances using >, <, or =.

f. How many students had shoes that measured less than 8 inches?

g. How many children measured the length of their shoes?

h. Mr. Jones's shoe length was $\frac{25}{2}$ inches. Use >, <, or = to compare the length of Mr. Jones's shoe to the length of the longest student shoe length. Who had the longer shoe?

3. Using the information in the table and on the line plot, write a question you could solve by using the line plot. Solve.

Name _____   Date _____

1. Estimate each sum or difference to the nearest half or whole number by rounding. Explain your estimate using words or a number line.

   a. $3\frac{1}{10} + 1\frac{3}{4} \approx$ _____

   b. $2\frac{9}{10} + 4\frac{4}{5} \approx$ _____

   c. $9\frac{9}{10} - 5\frac{1}{5} \approx$ _____

   d. $4\frac{1}{9} - 1\frac{1}{10} \approx$ _____

   e. $6\frac{3}{12} + 5\frac{1}{9} \approx$ _____

COMMON CORE

Lesson 29:   Estimate sums and differences using benchmark numbers.
Date: 10/20/14

engage^{ny}

5.F.13

2. Estimate each sum or difference to the nearest half or whole number by rounding. Explain your estimate using words or a number line.

   a. $\frac{16}{3} + \frac{17}{8} \approx$ _____

   b. $\frac{17}{3} - \frac{15}{4} \approx$ _____

   c. $\frac{57}{8} + \frac{26}{8} \approx$ _____

3. Gina's estimate for $7\frac{5}{8} - 2\frac{1}{2}$ was 5. Dominick's estimate was $5\frac{1}{2}$. Whose estimate do you think is closer to the actual difference? Explain.

4. Use benchmark numbers or mental math to estimate the sum or difference.

a. $10\frac{3}{4} + 12\frac{11}{12}$	b. $2\frac{7}{10} + 23\frac{3}{8}$
c. $15\frac{9}{12} - 8\frac{11}{12}$	d. $\frac{56}{7} - \frac{31}{8}$

Name _____   Date _____

1. Solve.

   a. $4\frac{1}{3} + \frac{1}{3}$

   b. $5\frac{1}{4} + \frac{2}{4}$

   c. $\frac{2}{6} + 3\frac{4}{6}$

   d. $\frac{5}{8} + 7\frac{3}{8}$

2. Complete the number sentences.

a. $3\frac{5}{6} + $ _____ $= 4$	b. $5\frac{3}{7} + $ ___ $= 6$
c. $5 = 4\frac{1}{8} + $ ____	d. $15 = 14\frac{4}{12} + $ ____

3. Draw a number bond and the arrow way to show how to make one. Solve.

   a. $2\frac{4}{5} + \frac{2}{5}$

   b. $3\frac{2}{3} + \frac{2}{3}$

   c. $4\frac{4}{6} + \frac{5}{6}$

   $\frac{1}{5}$ $\frac{1}{5}$

   $2\frac{4}{5} \xrightarrow{+\frac{1}{5}} 3 \xrightarrow{+\frac{1}{5}} 3\frac{1}{5}$

4. Solve.

a. $2\frac{3}{5} + \frac{3}{5}$	b. $3\frac{6}{8} + \frac{4}{8}$
c. $5\frac{4}{6} + \frac{3}{6}$	d. $\frac{7}{10} + 6\frac{6}{10}$
e. $\frac{5}{10} + 8\frac{9}{10}$	f. $7\frac{8}{12} + \frac{11}{12}$
g. $3\frac{90}{100} + \frac{58}{100}$	h. $\frac{60}{100} + 14\frac{79}{100}$

5. To solve $4\frac{8}{10} + \frac{3}{10}$, Carmen thought, "$4\frac{8}{10} + \frac{2}{10} = 5$, and $5 + \frac{1}{10} = 5\frac{1}{10}$."

Benny thought, "$4\frac{8}{10} + \frac{3}{10} = 4\frac{11}{10} = 4 + \frac{10}{10} + \frac{1}{10} = 5\frac{1}{10}$." Explain why Carmen and Benny are both right.

COMMON CORE

Lesson 30:   Add a mixed number and a fraction.
Date: 10/20/14

engage^ny

5.F.26

Name _____   Date _____

1. Solve.

   a. $2\frac{1}{3}$ + $1\frac{2}{3}$ = 3 + $\frac{3}{3}$ =

       2     $\frac{1}{3}$ 1 $\frac{2}{3}$

   b. $2\frac{2}{5}$ + $2\frac{2}{5}$

   c. $3\frac{3}{8}$ + $1\frac{5}{8}$

2. Solve.   Use a number line to show your work.

   a. $2\frac{2}{4} + 1\frac{3}{4}$ = 3 + $\frac{5}{4}$ = _____

               $\frac{4}{4}$ $\frac{1}{4}$

   b. $3\frac{4}{6} + 2\frac{5}{6}$

   c. $1\frac{9}{12} + 1\frac{7}{12}$

    | **Lesson 31:**   Add mixed numbers.
                     | **Date:**   10/20/14   **engage**^{ny}
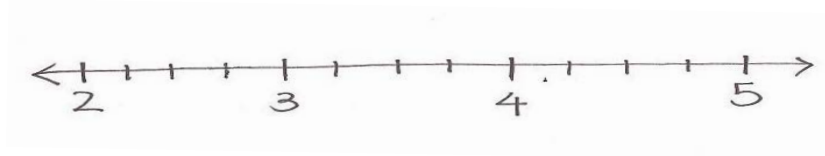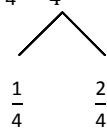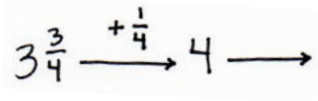
3. Solve. Use the arrow way to show how to make one.

a. $2\frac{3}{4} + 1\frac{3}{4} = 3\frac{3}{4} + \frac{3}{4} =$

$$\frac{1}{4} \qquad \frac{2}{4}$$

$$3\frac{3}{4} \xrightarrow{+\frac{1}{4}} 4 \longrightarrow$$

b. $2\frac{7}{8} + 3\frac{4}{8}$

c. $1\frac{7}{9} + 4\frac{5}{9}$

4. Solve. Use whichever method you prefer.

a. $1\frac{4}{5} + 1\frac{3}{5}$

b. $3\frac{8}{10} + 1\frac{5}{10}$

c. $2\frac{5}{7} + 3\frac{6}{7}$

Name _____   Date _____

1. Subtract. Model with a number line or the arrow way.

    a. $6\frac{3}{5} - \frac{1}{5}$

    b. $4\frac{9}{12} - \frac{7}{12}$

    c. $7\frac{1}{4} - \frac{3}{4}$

    d. $8\frac{3}{8} - \frac{5}{8}$

2. Use decomposition to subtract the fractions. Model with a number line or the arrow way.

    a. $2\frac{2}{5} - \frac{4}{5}$

    $\frac{2}{5} \qquad \frac{2}{5}$

    b. $2\frac{1}{3} - \frac{2}{3}$

    c. $4\frac{1}{6} - \frac{4}{6}$

    d. $3\frac{3}{6} - \frac{5}{6}$

e. $9\frac{3}{8} - \frac{7}{8}$

f. $7\frac{1}{10} - \frac{6}{10}$

g. $10\frac{1}{8} - \frac{5}{8}$

h. $9\frac{4}{12} - \frac{7}{12}$

i. $11\frac{3}{5} - \frac{4}{5}$

j. $17\frac{1}{9} - \frac{5}{9}$

3. Decompose the total to subtract the fractions.

a. $4\frac{1}{8} - \frac{3}{8} = 3\frac{1}{8} + \frac{5}{8} = 3\frac{6}{8}$

$3\frac{1}{8}$ ⌃ 1

b. $5\frac{2}{5} - \frac{3}{5}$
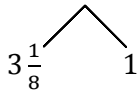
c. $7\frac{1}{8} - \frac{3}{8}$

d. $3\frac{3}{9} - \frac{4}{9}$

e. $6\frac{3}{10} - \frac{7}{10}$

f. $2\frac{5}{9} - \frac{8}{9}$

Name _____   Date _____

1. Write a related addition sentence. Subtract by counting on. Use a number line or the arrow way to help. The first one has been partially done for you.

   a. $3\frac{2}{5} - 1\frac{4}{5} = $ ____

      $1\frac{4}{5} + $ _____ $= 3\frac{2}{5}$

   b. $5\frac{3}{8} - 2\frac{5}{8}$

2. Subtract, as shown in Problem 2(a) below, by decomposing the fractional part of the number you are subtracting. Use a number line or the arrow way to help you.

   a. $4\frac{1}{5} - 1\frac{3}{5} = 3\frac{1}{5} - \frac{3}{5} = 2\frac{3}{5}$

      $\frac{1}{5} \quad \frac{2}{5}$

   b. $4\frac{1}{7} - 2\frac{4}{7}$

   c. $5\frac{5}{12} - 3\frac{8}{12}$

COMMON CORE

Lesson 33:   Subtract a mixed number from a mixed number.
Date: 10/20/14

engage^ny   5.F.62

2. Subtract, as shown in 3(a) below, by decomposing to take one out.

   a. $5\frac{5}{8} - 2\frac{7}{8} = 3\frac{5}{8} - \frac{7}{8} =$

   $2\frac{5}{8}$ 1

   b. $4\frac{3}{12} - 3\frac{8}{12}$

   c. $9\frac{1}{10} - 6\frac{9}{10}$

3. Solve using any strategy.

   a. $6\frac{1}{9} - 4\frac{3}{9}$

   b. $5\frac{3}{10} - 3\frac{6}{10}$

   c. $8\frac{7}{12} - 5\frac{9}{12}$

   d. $7\frac{4}{100} - 2\frac{92}{100}$

Name _____   Date _____

1. Subtract.

    a. $5\frac{1}{4} - \frac{3}{4}$

    $4 \qquad \frac{5}{4}$

    b. $6\frac{3}{8} - \frac{6}{8}$

    c. $7\frac{4}{6} - \frac{5}{6}$

2. Subtract the ones first.

    a. $4\frac{1}{5} - 1\frac{3}{5} = 3\frac{1}{5} - \frac{3}{5} = 2\frac{3}{5}$

    $2 \qquad \frac{6}{5}$

    b. $4\frac{3}{6} - 2\frac{5}{6}$

COMMON CORE

Lesson 34:   Subtract mixed numbers.
Date: 10/20/14

engage^{ny}

5.F.74

c. $8\frac{3}{8} - 2\frac{5}{8}$

d. $13\frac{3}{10} - 8\frac{7}{10}$

3. Solve using any strategy.

a. $7\frac{3}{12} - 4\frac{9}{12}$

b. $9\frac{6}{10} - 5\frac{8}{10}$

c. $17\frac{2}{16} - 9\frac{7}{16}$

d. $12\frac{5}{100} - 8\frac{94}{100}$

Name _____   Date _____

1. Draw and label a tape diagram to show the following are true.

   a. 8 thirds = 4 × (2 thirds) = (4 × 2) thirds

   b. 15 eighths = 3 × (5 eighths) = (3 × 5) eighths

2. Write the expression in unit form to solve.

   a. $10 \times \frac{2}{5}$ b. $3 \times \frac{5}{6}$

   c. $9 \times \frac{4}{9}$ d. $7 \times \frac{3}{4}$

3. Solve.

   a. $6 \times \frac{3}{4}$

   b. $7 \times \frac{5}{8}$

   c. $13 \times \frac{2}{3}$

   d. $18 \times \frac{2}{3}$

   e. $14 \times \frac{7}{10}$

   f. $7 \times \frac{14}{100}$

4. Mrs. Smith bought some orange juice. Each member of her family drank $\frac{2}{3}$ cup for breakfast. There are five people in her family. How many cups of orange juice did they drink?

engage^{ny}   5.G.14

Name _____   Date _____

1. Draw a tape diagram to represent

    $\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$.

2. Draw a tape diagram to represent

    $\frac{7}{8} + \frac{7}{8} + \frac{7}{8}$.

Write a multiplication expression equal to

$\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$.

Write a multiplication expression equal to

$\frac{7}{8} + \frac{7}{8} + \frac{7}{8}$.

3. Rewrite each repeated addition problem as a multiplication problem and solve. Express the result as a mixed number. The first one has been completed for you.

    a. $\frac{7}{5} + \frac{7}{5} + \frac{7}{5} + \frac{7}{5} = 4 \times \frac{7}{5} = \frac{4 \times 7}{5} = \frac{28}{5} = 5\frac{3}{5}$

    b. $\frac{7}{10} + \frac{7}{10} + \frac{7}{10}$

    c. $\frac{5}{12} + \frac{5}{12} + \frac{5}{12} + \frac{5}{12} + \frac{5}{12} + \frac{5}{12}$

    d. $\frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$

4. Solve using any method. Express your answers as whole or mixed numbers.

    a. $7 \times \frac{2}{9}$

    b. $11 \times \frac{2}{3}$

COMMON CORE   **Lesson 36:**   Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the associative property and visual models.   **engage**^{ny}   **5.G.23**

Date: 10/20/14

c. $40 \times \frac{2}{6}$

d. $24 \times \frac{5}{6}$

e. $23 \times \frac{3}{5}$

f. $34 \times \frac{2}{8}$

5. Coleton is playing with interlocking blocks that are each $\frac{3}{4}$ inch tall. He makes a tower 17 blocks tall. How tall is his tower in inches?

6. There were 11 players on Mr. Maiorani's softball team. They each ate $\frac{3}{8}$ of a pizza. How many pizzas did they eat?

7. A bricklayer places 12 bricks along an outside wall of a shed. Each brick is $\frac{3}{4}$ foot long. How many feet long is that wall of the shed?

COMMON CORE | **Lesson 36:** | Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the associative property and visual models.

| **Date:** | 10/20/14

engageny   **5.G.24**

Name _____   Date _____

1. Draw tape diagrams to show two ways to represent 3 units of $5\frac{1}{12}$.

    Write a multiplication expression to match each tape diagram.

2. Solve the following using the distributive property. The first one has been done for you. (As soon as you are ready, you may omit the step that is in line 2.)

a. $3 \times 6\frac{4}{5} = 3 \times \left(6 + \frac{4}{5}\right)$ $\qquad\qquad = (3 \times 6) + \left(3 \times \frac{4}{5}\right)$ $\qquad\qquad = 18 + \frac{12}{5}$ $\qquad\qquad = 18 + 2\frac{2}{5}$ $\qquad\qquad = 20\frac{2}{5}$	b. $5 \times 4\frac{1}{6}$
c. $6 \times 2\frac{3}{5}$	d. $2 \times 7\frac{3}{10}$

COMMON CORE   **Lesson 37:**   Find the product of a whole number and a mixed number using the distributive property.   engage^ny   **5.G.34**

Date: 10/20/14

e. $8 \times 7\frac{1}{4}$	f. $3\frac{3}{8} \times 12$

3. Sara's street is $2\frac{3}{10}$ miles long. She ran the length of the street 6 times. How far did she run?

4. Kelly's new puppy weighed $4\frac{7}{10}$ pounds when she brought him home. Now, he weighs six times as much. How much does he weigh now?

COMMON CORE™

Lesson 37: Find the product of a whole number and a mixed number using the distributive property.

Date: 10/20/14

engage^ny

5.G.35

Name _____   Date _____

1. Fill in the unknown factors.

   a. $8 \times 4\frac{4}{7} = (\underline{\quad} \times 4) + (\underline{\quad} \times \frac{4}{7})$

   b. $9 \times 7\frac{7}{10} = (9 \times \underline{\quad}) + (9 \times \underline{\quad})$

2. Multiply. Use the distributive property.

   a. $6 \times 8\frac{2}{7}$

   b. $7\frac{3}{4} \times 9$

   c. $9 \times 8\frac{7}{9}$

   d. $25\frac{7}{8} \times 3$

Lesson 38: Find the product of a whole number and a mixed number using the distributive property.
Date: 10/20/14

engage^ny 5.G.44

e. $4 \times 20\frac{8}{12}$

f. $30\frac{3}{100} \times 12$

3. Brandon is cutting 9 boards for a woodworking project. Each board is $4\frac{5}{8}$ feet long. What is the total length of the boards?

4. Rocky the collie ate $3\frac{1}{4}$ cups of dog food each day for two weeks. How much dog food did Rocky eat in that time?

5. At the class party, each student will be given a container that holds $8\frac{5}{8}$ ounces of juice. There are 25 students in the class. If each student's container is filled, how many ounces of juice does the teacher need to buy?

COMMON CORE

Lesson 38: Find the product of a whole number and a mixed number using the distributive property.
Date: 10/20/14

engage^ny 5.G.45

Name _____   Date _____

Use the RDW process to solve.

1. Ground turkey is sold in packages of $2\frac{1}{2}$ pounds. Dawn bought eight times as much turkey that is sold in 1 package for her son's birthday party. How many pounds of ground turkey did Dawn buy?

2. Trevor's stack of books is $7\frac{7}{8}$ inches tall. Rick's stack is 3 times as tall. What is the difference in the heights of their stacks of books?

3. It takes $8\frac{3}{4}$ yards of fabric to make one quilt. Gail needs three times as much fabric to make three quilts. She already has two yards of fabric. How many more yards of fabric does Gail need to buy in order to make three quilts?

4. Carol made punch. She used $12\frac{3}{8}$ cups of juice and then added three times as much ginger ale. Then, she added 1 cup of lemonade. How many cups of punch did her recipe make?

5. Brandon drove $72\frac{7}{10}$ miles on Monday. He drove 3 times as far on Tuesday. How far did he drive in the two days?

6. Mrs. Reiser used $9\frac{8}{10}$ gallons of gas this week. Mr. Reiser used five times as much gas as Mrs. Reiser used this week. If Mr. Reiser pays $3 for each gallon of gas, how much did Mr. Reiser pay for gas this week?

Lesson 39:   Solve multiplicative comparison word problems involving fractions.
Date: 10/20/14

engage^ny   5.G.57

Name _____   Date _____

The chart to the right shows the total monthly rainfall for a city.

1. Use the data to create a line plot at the bottom of this page and to answer the following questions.

Month	Rainfall (in inches)
January	$2\frac{2}{8}$
February	$1\frac{3}{8}$
March	$2\frac{3}{8}$
April	$2\frac{5}{8}$
May	$4\frac{1}{4}$
June	$2\frac{1}{4}$
July	$3\frac{7}{8}$
August	$3\frac{1}{4}$
September	$1\frac{5}{8}$
October	$3\frac{2}{8}$
November	$1\frac{3}{4}$
December	$1\frac{5}{8}$

COMMON CORE

Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.

Date: 10/20/14

engage^ny   **5.G.68**

2.   What is the difference in rainfall from the wettest and driest months?

3.   How much more rain fell in May than in April?

4.   What is the combined rainfall amount for the summer months of June, July, and August?

5.   How much more rain fell in the summer months than the combined rainfall for the last 4 months of the year?

6.   In which months did it rain twice as much as it rained in December?

7.   Each inch of rain can produce ten times that many inches of snow. If all of the rainfall in January was in the form of snow, how many inches of snow fell in January?

Name _____   Date _____

1. Find the sums.

   a. $\frac{0}{5} + \frac{1}{5} + \frac{2}{5} + \frac{3}{5} + \frac{4}{5} + \frac{5}{5}$

   b. $\frac{0}{6} + \frac{1}{6} + \frac{2}{6} + \frac{3}{6} + \frac{4}{6} + \frac{5}{6} + \frac{6}{6}$

   c. $\frac{0}{7} + \frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} + \frac{5}{7} + \frac{6}{7} + \frac{7}{7}$

   d. $\frac{0}{8} + \frac{1}{8} + \frac{2}{8} + \frac{3}{8} + \frac{4}{8} + \frac{5}{8} + \frac{6}{8} + \frac{7}{8} + \frac{8}{8}$

   e. $\frac{0}{9} + \frac{1}{9} + \frac{2}{9} + \frac{3}{9} + \frac{4}{9} + \frac{5}{9} + \frac{6}{9} + \frac{7}{9} + \frac{8}{9} + \frac{9}{9}$

   f. $\frac{0}{10} + \frac{1}{10} + \frac{2}{10} + \frac{3}{10} + \frac{4}{10} + \frac{5}{10} + \frac{6}{10} + \frac{7}{10} + \frac{8}{10} + \frac{9}{10} + \frac{10}{10}$

2. Describe a pattern you notice when adding the sums of fractions with even denominators as opposed to those with odd denominators.

3. How would the sums change if the addition started with the unit fraction rather than with 0?

engage^ny   **5.H.11**

4. Find the sums.

a. $\frac{0}{20} + \frac{1}{20} + \frac{2}{20} + \ldots \frac{20}{20}$

b. $\frac{0}{35} + \frac{1}{35} + \frac{2}{35} + \ldots \frac{35}{35}$

c. $\frac{0}{36} + \frac{1}{36} + \frac{2}{36} + \ldots + \frac{36}{36}$

d. $\frac{0}{75} + \frac{1}{75} + \frac{2}{75} + \ldots \frac{75}{75}$

e. $\frac{0}{100} + \frac{1}{100} + \frac{2}{100} + \ldots \frac{100}{100}$

f. $\frac{0}{99} + \frac{1}{99} + \frac{2}{99} + \ldots \frac{99}{99}$

5. How can you apply this strategy to find the sum of all the whole numbers from 0 to 50? To 99?

Lesson 41:   Find and use a pattern to calculate the sum of all fractional parts
between 0 and 1. Share and critique peer strategies.

Date: 10/20/14

engage^{ny}   5.H.12

Name _____   Date _____

1. Draw a number bond and write the number sentence to match the tape diagram.
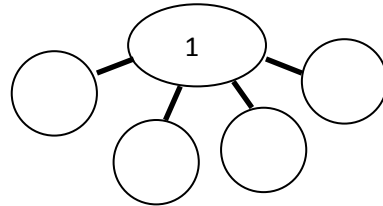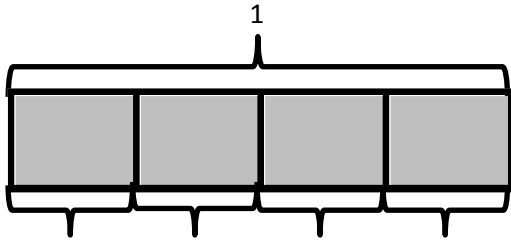
2. Draw and label tape diagrams to model each number sentence.
   a. $1 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

   b. $\frac{5}{6} = \frac{2}{6} + \frac{2}{6} + \frac{1}{6}$

Name _____   Date _____

Step 1: Draw and shade a tape diagram of the given fraction.

Step 2: Record the decomposition of the fraction in three different ways using number sentences.

$$\frac{4}{7}$$

COMMON CORE™

Lesson 2:   Decompose fractions as a sum of unit fractions using tape diagrams.
Date: 10/20/14

engage^ny   5.A.24

Name _____   Date _____

1. Decompose each fraction modeled by a tape diagram as a sum of unit fractions. Write the equivalent multiplication sentence.

    a.

    1

    b.

    1
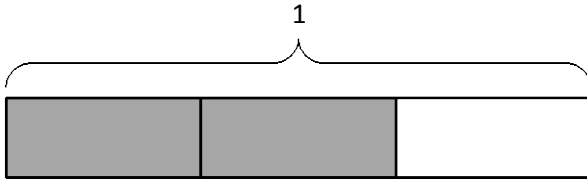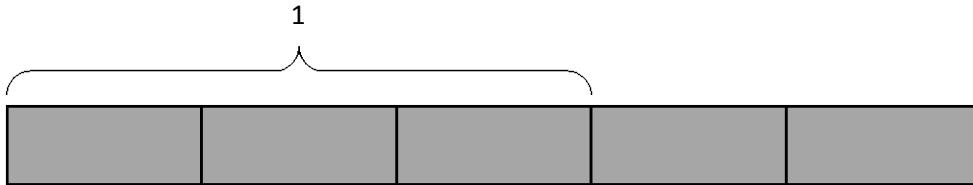
2. Draw a tape diagram and record the given fraction's decomposition into unit fractions as a multiplication sentence.

    $\frac{6}{9}$

Name _____   Date _____

1. The total length of the tape diagram represents 1. Decompose the shaded unit fraction as the sum of smaller unit fractions in at least two different ways.
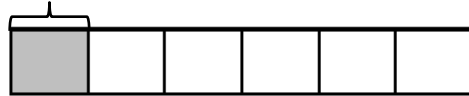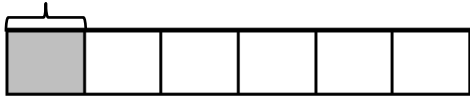
2. Draw a tape diagram to prove the following statement.

$$\frac{2}{3} = \frac{4}{6}$$

Lesson 4:   Decompose fractions into sums of smaller unit fractions using tape diagrams.

Date: 10/20/14

engage^ny   **5.A.46**

Name _____   Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

    a. 2 rows
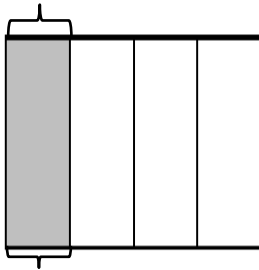
    b. 3 rows
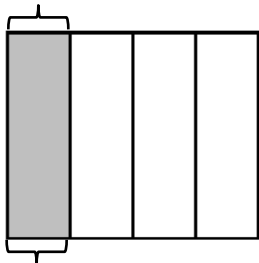
2. Draw an area model to show the decomposition represented by the number sentence below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

    $$\frac{3}{5} = \frac{6}{10}$$

Name _____   Date _____

1. The rectangle below represents 1. Draw horizontal lines to decompose the rectangle into eighths. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences.
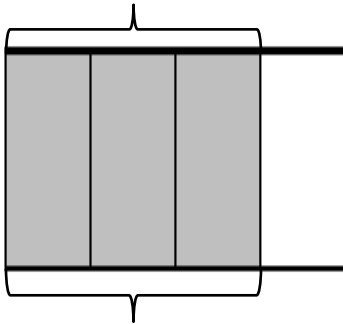
2. Draw an area model to show the decomposition represented by the number sentence below.

$$\frac{4}{5} = \frac{8}{10}$$

Name _____   Date _____

Draw two different area models to represent 1 fourth by shading.

Decompose the shaded fraction into (a) eighths and (b) twelfths.

Use multiplication to show how each fraction is equivalent to 1 fourth.

a.

b.

Lesson 7:   Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}   5.B.11

Name _____   Date _____

1. Use multiplication to create an equivalent fraction for the fraction below.

$$\frac{2}{5}$$

2. Determine if the following is a true number sentence. If needed, correct the statement by changing the right-hand side of the number sentence.

$$\frac{3}{4} = \frac{9}{8}$$

COMMON CORE

Lesson 8:   Use the area model and multiplication to show the equivalence of two fractions.

Date: 10/20/14

engage^ny   **5.B.22**

Name _____   Date _____

a. In the first area model, show 2 sixths. In the second area model, show 4 twelfths. Show how both
fractions can be composed, or renamed, as the same unit fraction.
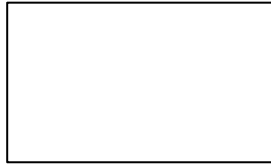
b. Express the equivalent fractions in a number sentence using division.

COMMON CORE

Lesson 9:   Use the area model and division to show the equivalence of two
fractions.
Date: 10/20/14

engage^ny   5.B.33

Name _____   Date _____

Draw an area model to show why the fractions are equivalent. Show the equivalence in a number sentence using division.

$$\frac{4}{10} = \frac{2}{5}$$

Lesson 10: Use the area model and division to show the equivalence of two fractions.

Date: 10/20/14

engage^{ny}   5.B.45

Name _____   Date _____

1. Partition a number line from 0 to 1 into sixths. Decompose $\frac{2}{6}$ into 4 equal lengths.

2. Write a number sentence using multiplication to show what fraction represented on the number line is equivalent to $\frac{2}{6}$.

3. Write a number sentence using division to show what fraction represented on the number line is equivalent to $\frac{2}{6}$.

Name _____   Date _____

1. Plot the following points on the number line without measuring.

    a. $\frac{8}{10}$ b. $\frac{3}{5}$ c. $\frac{1}{4}$
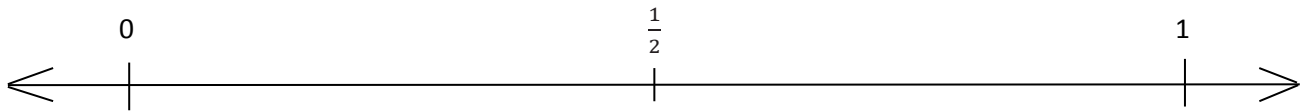
2. Use the number line in Problem 1 to compare the fractions by writing >, <, or = on the lines.

    a. $\frac{1}{4}$ _____ $\frac{1}{2}$

    b. $\frac{8}{10}$ _____ $\frac{3}{5}$

    c. $\frac{1}{2}$ _____ $\frac{3}{5}$

    d. $\frac{1}{4}$ _____ $\frac{8}{10}$

COMMON CORE   **Lesson 12:**   Reason using benchmarks to compare two fractions on the number line.   **engage**^ny   5.C.11

Date: 10/20/14

Name _____   Date _____

1. Place the following fractions on the number line given.

    a. $\frac{5}{4}$ b. $\frac{10}{7}$ c. $\frac{16}{9}$

    1                                $1\frac{1}{2}$ 2
    $\longleftarrow$|———————|———————|———————|———————|$\longrightarrow$
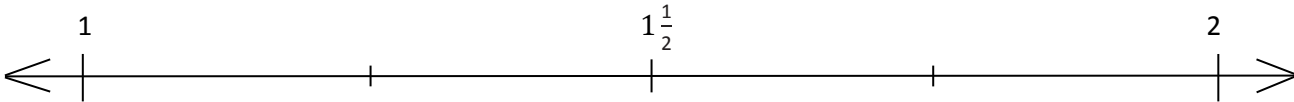
2. Compare the fractions using >, <, or =.

    a. $\frac{5}{4}$ ————— $\frac{10}{7}$ b. $\frac{5}{4}$ ————— $\frac{16}{9}$ c. $\frac{16}{9}$ ————— $\frac{10}{7}$

COMMON CORE

Lesson 13:	Reason using benchmarks to compare two fractions on the number line.
Date:	10/20/14

engage^{ny}   **5.C.24**

Name _____   Date _____

1. Draw tape diagrams to compare the following fractions:

$$\frac{2}{5} \qquad \underline{\qquad} \qquad \frac{3}{10}$$

2. Use a number line to compare the following fractions:

$$\frac{4}{3} \qquad \underline{\qquad} \qquad \frac{7}{6}$$
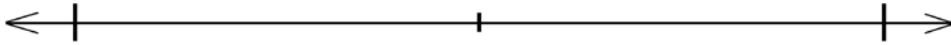
Name _____   Date _____

Draw an area model for each pair of fractions, and use it to compare the two fractions by writing >, <, or = on the line.

1. $\frac{3}{4}$ _____ $\frac{4}{5}$

2. $\frac{2}{6}$ _____ $\frac{3}{5}$

Name _____   Date _____

1. Solve. Use a number bond to decompose the difference. Record your final answer as a mixed number.

    $\dfrac{16}{9} - \dfrac{5}{9}$

2. Solve. Use a number bond to decompose the sum. Record your final answer as a mixed number.

    $\dfrac{5}{12} + \dfrac{10}{12}$

Name _____   Date _____

1. Solve. Model the problem with a number line, and solve by both counting up and subtracting.

$$1 - \frac{2}{5}$$

2. Find the difference in two ways. Use a number bond to show the decomposition.

$$1\frac{2}{7} - \frac{5}{7}$$

COMMON CORE | **Lesson 17:** Use visual models to add and subtract two fractions with the same units, including subtracting from one whole.
Date: 10/20/14

engage^{ny} **5.D.25**

Name _____   Date _____

Solve the following problems. Use number bonds to help you.

1. $\frac{5}{9} + \frac{2}{9} + \frac{4}{9}$

2. $1 - \frac{5}{8} - \frac{1}{8}$

Name _____   Date _____

Use the RDW process to solve.

1. Mrs. Smith took her bird to the vet. Tweety weighed $1\frac{3}{10}$ pounds. The vet said that Tweety weighed $\frac{4}{10}$ pound more last year. How much did Tweety weigh last year?

2. Hudson picked $1\frac{1}{4}$ baskets of apples. Suzy picked 2 baskets of apples. How many more baskets of apples did Suzy pick than Hudson?

Lesson 19:   Solve word problems involving addition and subtraction of fractions.
Date: 10/20/14

engage^{ny}   5.D.50

Name _____   Date _____

1. Draw a number line to model the addition. Solve, and then, write a complete number sentence.

$$\frac{5}{8} + \frac{2}{4}$$

2. Solve without drawing a model.

$$\frac{3}{4} + \frac{1}{2}$$

Lesson 20:   Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

engage^{ny}   **5.D.63**

Name _____   Date _____

Solve. Write a complete number sentence. Use a number bond to write each sum as a mixed number. Use a model if needed.

1. $\frac{1}{4} + \frac{7}{8}$

2. $\frac{2}{3} + \frac{7}{12}$

Name _____   Date _____

Complete the subtraction sentences using number bonds. Draw a model if needed.

1. $6 - \frac{1}{5} =$ _____

2. $8 - \frac{5}{6} =$ _____

3. $7 - \frac{5}{8} =$ _____

Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.

Date: 10/20/14

engage^{ny} 5.E.14

Name _____   Date _____

Multiply and write the product as a mixed number. Draw a number line to support your answer.

1. $8 \times \dfrac{1}{2}$

2. 7 copies of 1 fourth

3. $13 \times \dfrac{1}{3}$

COMMON CORE | **Lesson 23:**   Add and multiply unit fractions to build fractions greater than 1 using visual models.

Date: 10/20/14

engage^{ny}   **5.E.26**

Name _____   Date _____

1. Rename the fraction as a mixed number by decomposing it into two parts. Model the decomposition with a number line and a number bond.

$$\frac{17}{5}$$

2. Convert the fraction to a mixed number. Model with a number line.

$\frac{19}{3}$

3. Convert the fraction to a mixed number.

$\frac{11}{4}$

COMMON CORE | **Lesson 24:** Decompose and compose fractions greater than 1 to express them in various forms. | engage^{ny} | **5.E.37**

Date: 10/20/14

Name _____   Date _____

Convert each mixed number to a fraction greater than 1.

1. $3\frac{1}{5}$

2. $2\frac{3}{5}$

3. $4\frac{2}{9}$

COMMON CORE | **Lesson 25:** Decompose and compose fractions greater than 1 to express them in various forms.
Date: 10/20/14

engage^ny 5.E.48

Name _____   Date _____

Compare the fractions given below by writing >, <, or =.

Give a brief explanation for each answer, referring to benchmark fractions.

1. $3\frac{2}{3}$ _____ $3\frac{4}{6}$

2. $\frac{12}{3}$ _____ $\frac{27}{7}$

3. $\frac{10}{6}$ _____ $\frac{5}{4}$

4. $3\frac{2}{5}$ _____ $3\frac{3}{10}$

Name _____   Date _____

Compare each pair of fractions using >, <, or = using any strategy.

1. $4\frac{3}{8}$ _____ $4\frac{1}{4}$

2. $3\frac{4}{5}$ _____ $3\frac{9}{10}$

3. $2\frac{1}{3}$ _____ $2\frac{2}{5}$

4. $10\frac{2}{5}$ _____ $10\frac{3}{4}$

Name _____   Date _____

Mr. O'Neil asked his students to record the length of time they read over the weekend. The times are listed in the table.

1. At the bottom of the page, make a line plot of the data.

2. One of the students read $\frac{3}{4}$ hour on Friday, $\frac{3}{4}$ hour on Saturday, and $\frac{3}{4}$ hour on Sunday. How many hours did that student read over the weekend? Name that student.

Student	Length of time (in hours)
Robin	$\frac{1}{2}$
Bill	1
Katrina	$\frac{3}{4}$
Kelly	$1\frac{3}{4}$
Mary	$1\frac{1}{2}$
Gail	$2\frac{1}{4}$
Scott	$1\frac{3}{4}$
Ben	$2\frac{2}{4}$

Name _____   Date _____

Estimate each sum or difference to the nearest half or whole number by rounding. Explain your estimate using words or a number line.

1. $2\frac{9}{10} + 2\frac{1}{4} \approx$ _____

2. $11\frac{8}{9} - 3\frac{3}{8} \approx$ _____

Lesson 29:   Estimate sums and differences using benchmark numbers.
Date: 10/20/14

5.F.12

Name _____   Date _____

Solve.

1. $3\frac{2}{5} + $ _____ $= 4$

2. $2\frac{3}{8} + \frac{7}{8}$

COMMON CORE

Lesson 30:   Add a mixed number and a fraction.
Date: 10/20/14

engage^ny   5.F.24

Name _____   Date _____

Solve.

1. $2\frac{3}{8} + 1\frac{5}{8}$

2. $3\frac{4}{5} + 2\frac{3}{5}$

Name _____   Date _____

Solve.

1. $10\frac{5}{6} - \frac{4}{6}$

2. $8\frac{3}{8} - \frac{6}{8}$

Name _____   Date _____

Solve using any strategy.

1. $4\frac{2}{3} - 2\frac{1}{3}$

2. $12\frac{5}{8} - 8\frac{7}{8}$

Name _____   Date _____

Solve.

1. $7\frac{1}{6} - 2\frac{4}{6}$

2. $12\frac{5}{8} - 3\frac{7}{8}$

Name _____   Date _____

1. Solve using unit form.

    $5 \times \dfrac{2}{3}$

2. Solve.

    $11 \times \dfrac{5}{6}$

Name _____   Date _____

Solve using any method.

1. $7 \times \frac{3}{4}$

2. $9 \times \frac{2}{5}$

3. $60 \times \frac{5}{8}$

COMMON CORE™ | **Lesson 36:**   Represent the multiplication of *n* times *a/b* as (*n* × *a*)/*b* using the
                     | associative property and visual models.   **engage**^ny   **5.G.22**
                     | **Date:**   10/20/14

Name _____   Date _____

Multiply. Write each product as a mixed number.

1. $4 \times 5\frac{3}{8}$

2. $4\frac{3}{10} \times 3$

5.G.33

Name _____   Date _____

1. Fill in the unknown factors.

$8 \times 5\frac{2}{3} = (\underline{} \times 5) + (\underline{} \times \frac{2}{3})$

2. Multiply. Use the distributive property.

$6\frac{5}{8} \times 7$

COMMON CORE

| Lesson 38: | Find the product of a whole number and a mixed number using the distributive property. |
| Date: | 10/20/14 |

engage^ny   5.G.43

Name _____   Date _____

Use the RDW process to solve.

Jeff has ten packages that he wants to mail. Nine identical packages weigh $2\frac{7}{8}$ pounds each. A tenth package weighs two times as much as one of the other packages. How many pounds do all ten packages weigh?

Name _____   Date _____

Coach Taylor asked his team to record the distance they ran during practice.

The distances are listed in the table.

Team Members	Distance (in miles)
Alec	$1\frac{3}{4}$
Henry	$1\frac{1}{2}$
Charles	$2\frac{1}{8}$
Steve	$1\frac{3}{4}$
Pitch	$2\frac{2}{4}$
Raj	$1\frac{6}{8}$
Pam	$2\frac{1}{2}$
Tony	$1\frac{3}{8}$

1. Use the table to locate the incorrect data on the line plot.

    Circle any incorrect points.

    Mark any missing points.
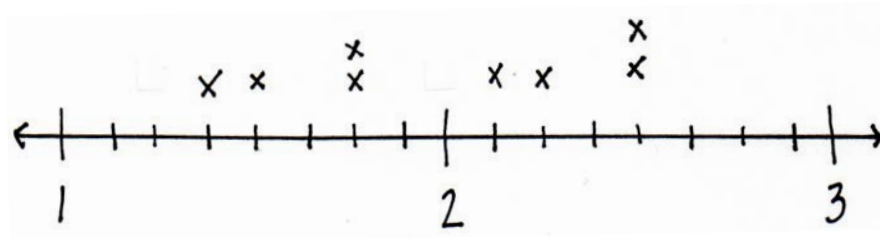
2. Of the team members who ran $1\frac{6}{8}$ miles, how many miles did those team members run combined?

COMMON CORE

Lesson 40: Solve word problems involving the multiplication of a whole number and a fraction including those involving line plots.

Date: 10/20/14

engage^{ny} **5.G.67**

Name _____   Date _____

Find the sums.

1. $\dfrac{0}{20} + \dfrac{1}{20} + \dfrac{2}{20} + \ldots \dfrac{20}{20}$

2. $\dfrac{0}{200} + \dfrac{1}{200} + \dfrac{2}{200} + \ldots \dfrac{200}{200}$

COMMON CORE

Lesson 41:   Find and use a pattern to calculate the sum of all fractional parts between 0 and 1. Share and critique peer strategies.
Date: 10/20/14

engage^ny   5.H.10

A

Number Correct: _____

Multiply Whole Numbers Times Fractions

1.	$\frac{1}{3} + \frac{1}{3} =$		23.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$	
2.	$2 \times \frac{1}{3} =$		24.	$4 \times \frac{1}{3} =$	
3.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		25.	$\frac{5}{6} =$	$\underline{\quad} \times \frac{1}{6}$
4.	$3 \times \frac{1}{4} =$		26.	$\frac{5}{6} =$	$5 \times \underline{\quad}$
5.	$\frac{1}{5} + \frac{1}{5} =$		27.	$\frac{5}{8} =$	$5 \times \underline{\quad}$
6.	$2 \times \frac{1}{5} =$		28.	$\frac{5}{8} =$	$\underline{\quad} \times \frac{1}{8}$
7.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		29.	$\frac{7}{8} =$	$7 \times \underline{\quad}$
8.	$3 \times \frac{1}{5} =$		30.	$\frac{7}{10} =$	$7 \times \underline{\quad}$
9.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		31.	$\frac{7}{8} =$	$\underline{\quad} \times \frac{1}{8}$
10.	$4 \times \frac{1}{5} =$		32.	$\frac{7}{10} =$	$\underline{\quad} \times \frac{1}{10}$
11.	$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$		33.	$\frac{6}{6} =$	$6 \times \underline{\quad}$
12.	$3 \times \frac{1}{10} =$		34.	$1 =$	$6 \times \underline{\quad}$
13.	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} =$		35.	$\frac{8}{8} =$	$\underline{\quad} \times \frac{1}{8}$
14.	$3 \times \frac{1}{8} =$		36.	$1 =$	$\underline{\quad} \times \frac{1}{8}$
15.	$\frac{1}{2} + \frac{1}{2} =$		37.	$9 \times \frac{1}{10} =$	
16.	$2 \times \frac{1}{2} =$		38.	$7 \times \frac{1}{5} =$	
17.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$		39.	$1 =$	$3 \times \underline{\quad}$
18.	$3 \times \frac{1}{3} =$		40.	$7 \times \frac{1}{12} =$	
19.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		41.	$1 =$	$\underline{\quad} \times \frac{1}{5}$
20.	$4 \times \frac{1}{4} =$		42.	$\frac{3}{5} =$	$\frac{1}{5} + \frac{1}{5} + \underline{\quad}$
21.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$		43.	$3 \times \frac{1}{4} =$	$\underline{\quad} + \frac{1}{4} + \frac{1}{4}$
22.	$3 \times \frac{1}{2} =$		44.	$1 =$	$\underline{\quad} + \underline{\quad} + \underline{\quad}$

B

Multiply Whole Numbers Times Fractions

1.	$\frac{1}{5} + \frac{1}{5} =$	
2.	$2 \times \frac{1}{5} =$	
3.	$\frac{1}{3} + \frac{1}{3} =$	
4.	$2 \times \frac{1}{3} =$	
5.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$	
6.	$3 \times \frac{1}{4} =$	
7.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$	
8.	$3 \times \frac{1}{5} =$	
9.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$	
10.	$4 \times \frac{1}{5} =$	
11.	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} =$	
12.	$3 \times \frac{1}{8} =$	
13.	$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$	
14.	$3 \times \frac{1}{10} =$	
15.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$	
16.	$3 \times \frac{1}{3} =$	
17.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$	
18.	$4 \times \frac{1}{4} =$	
19.	$\frac{1}{2} + \frac{1}{2} =$	
20.	$2 \times \frac{1}{2} =$	
21.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$	
22.	$4 \times \frac{1}{3} =$	

23.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	
24.	$3 \times \frac{1}{2} =$	
25.	$\frac{5}{6} =$	$\underline{\quad} \times \frac{1}{6}$
26.	$\frac{5}{6} =$	$5 \times \underline{\quad}$
27.	$\frac{5}{8} =$	$5 \times \underline{\quad}$
28.	$\frac{5}{8} =$	$\underline{\quad} \times \frac{1}{8}$
29.	$\frac{7}{8} =$	$7 \times \underline{\quad}$
30.	$\frac{7}{10} =$	$7 \times \underline{\quad}$
31.	$\frac{7}{8} =$	$\underline{\quad} \times \frac{1}{8}$
32.	$\frac{7}{10} =$	$\underline{\quad} \times \frac{1}{10}$
33.	$\frac{8}{8} =$	$8 \times \underline{\quad}$
34.	$1 =$	$8 \times \underline{\quad}$
35.	$\frac{6}{6} =$	$\underline{\quad} \times \frac{1}{6}$
36.	$1 =$	$\underline{\quad} \times \frac{1}{6}$
37.	$5 \times \frac{1}{12} =$	
38.	$6 \times \frac{1}{5} =$	
39.	$1 =$	$4 \times \underline{\quad}$
40.	$9 \times \frac{1}{10} =$	
41.	$1 =$	$\underline{\quad} \times \frac{1}{3}$
42.	$\frac{3}{4} =$	$\frac{1}{4} + \frac{1}{4} + \underline{\quad}$
43.	$3 \times \frac{1}{5} =$	$\underline{\quad} + \frac{1}{5} + \frac{1}{5}$
44.	$1 =$	$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

A

Number Correct: _____

Subtract Fractions

1.	$2 - 1 =$		23.	$\frac{4}{3} - \frac{2}{3} =$	
2.	$\frac{2}{2} - \frac{1}{2} =$		24.	$1\frac{1}{3} - \frac{2}{3} =$	
3.	$1 - \frac{1}{2} =$		25.	$1\frac{2}{3} - \frac{1}{3} =$	
4.	$3 - 1 =$		26.	$7 - 4 =$	
5.	$\frac{3}{3} - \frac{1}{3} =$		27.	$\frac{7}{5} - \frac{4}{5} =$	
6.	$1 - \frac{1}{3} =$		28.	$1\frac{2}{5} - \frac{4}{5} =$	
7.	$8 - 1 =$		29.	$1\frac{4}{5} - \frac{2}{5} =$	
8.	$\frac{8}{8} - \frac{1}{8} =$		30.	$5 - 3 =$	
9.	$1 - \frac{1}{8} =$		31.	$\frac{5}{4} - \frac{3}{4} =$	
10.	$5 - 1 =$		32.	$1\frac{1}{4} - \frac{3}{4} =$	
11.	$\frac{5}{5} - \frac{1}{5} =$		33.	$1\frac{3}{4} - \frac{1}{4} =$	
12.	$1 - \frac{1}{5} =$		34.	$1 - \frac{3}{8} =$	
13.	$1 - \frac{2}{5} =$		35.	$1 - \frac{7}{8} =$	
14.	$1 - \frac{4}{5} =$		36.	$1\frac{7}{8} - \frac{3}{8} =$	
15.	$1 - \frac{3}{5} =$		37.	$1\frac{3}{8} - \frac{7}{8} =$	
16.	$1 - \frac{1}{4} =$		38.	$1 - \frac{1}{6} =$	
17.	$1 - \frac{3}{4} =$		39.	$1 - \frac{5}{6} =$	
18.	$1 - \frac{1}{10} =$		40.	$1\frac{5}{6} - \frac{1}{6} =$	
19.	$1 - \frac{9}{10} =$		41.	$1\frac{1}{6} - \frac{5}{6} =$	
20.	$1 - \frac{3}{10} =$		42.	$1 - \frac{5}{12} =$	
21.	$1 - \frac{7}{10} =$		43.	$1\frac{1}{12} - \frac{7}{12} =$	
22.	$4 - 2 =$		44.	$1\frac{4}{15} - \frac{13}{15} =$	

COMMON CORE

Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

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5.D.71

B

Subtract Fractions

1.	$3 - 1 =$		23.	$\frac{5}{4} - \frac{3}{4} =$	
2.	$\frac{3}{3} - \frac{1}{3} =$		24.	$1\frac{1}{4} - \frac{3}{4} =$	
3.	$1 - \frac{1}{3} =$		25.	$1\frac{3}{4} - \frac{1}{4} =$	
4.	$2 - 1 =$		26.	$8 - 4 =$	
5.	$\frac{2}{2} - \frac{1}{2} =$		27.	$\frac{8}{5} - \frac{4}{5} =$	
6.	$1 - \frac{1}{2} =$		28.	$1\frac{3}{5} - \frac{4}{5} =$	
7.	$6 - 1 =$		29.	$1\frac{4}{5} - \frac{3}{5} =$	
8.	$\frac{6}{6} - \frac{1}{6} =$		30.	$7 - 5 =$	
9.	$1 - \frac{1}{6} =$		31.	$\frac{7}{6} - \frac{5}{6} =$	
10.	$10 - 1 =$		32.	$1\frac{1}{6} - \frac{5}{6} =$	
11.	$\frac{10}{10} - \frac{1}{10} =$		33.	$1\frac{5}{6} - \frac{1}{6} =$	
12.	$1 - \frac{1}{10} =$		34.	$1 - \frac{5}{8} =$	
13.	$1 - \frac{2}{10} =$		35.	$1 - \frac{7}{8} =$	
14.	$1 - \frac{4}{10} =$		36.	$1\frac{7}{8} - \frac{5}{8} =$	
15.	$1 - \frac{3}{10} =$		37.	$1\frac{5}{8} - \frac{7}{8} =$	
16.	$1 - \frac{1}{5} =$		38.	$1 - \frac{1}{4} =$	
17.	$1 - \frac{4}{5} =$		39.	$1 - \frac{3}{4} =$	
18.	$1 - \frac{1}{8} =$		40.	$1\frac{3}{4} - \frac{1}{4} =$	
19.	$1 - \frac{7}{8} =$		41.	$1\frac{1}{4} - \frac{3}{4} =$	
20.	$1 - \frac{3}{8} =$		42.	$1 - \frac{7}{12} =$	
21.	$1 - \frac{5}{8} =$		43.	$1\frac{1}{12} - \frac{5}{12} =$	
22.	$5 - 3 =$		44.	$1\frac{7}{15} - \frac{11}{15} =$	

COMMON CORE™

Lesson 21: Use visual models to add two fractions with related units using the denominators 2, 3, 4, 5, 6, 8, 10, and 12.
Date: 10/20/14

engage^ny

5.D.72

A

Number Correct: _____

Add Fractions

1.	$1 + 1 =$		23.	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} =$	$1\frac{}{5}$
2.	$\frac{1}{5} + \frac{1}{5} =$		24.	$3 + 3 + 3 =$	
3.	$2 + 1 =$		25.	$\frac{3}{8} + \frac{3}{8} + \frac{3}{8} =$	eighths
4.	$\frac{2}{5} + \frac{1}{5} =$		26.	$\frac{3}{8} + \frac{3}{8} + \frac{3}{8} =$	$1\frac{}{8}$
5.	$2 + 2 =$		27.	$\frac{5}{8} + \frac{5}{8} + \frac{5}{8} =$	$1\frac{}{8}$
6.	$\frac{2}{5} + \frac{2}{5} =$		28.	$1 + 1 + 1 =$	
7.	$3 + 2 =$		29.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	halves
8.	$\frac{3}{5} + \frac{2}{5} =$	fifths	30.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	$1\frac{}{2}$
9.	$\frac{5}{5} =$		31.	$4 + 4 + 4 =$	
10.	$\frac{3}{5} + \frac{2}{5} =$		32.	$\frac{4}{10} + \frac{4}{10} + \frac{4}{10} =$	tenths
11.	$3 + 2 =$		33.	$\frac{4}{10} + \frac{4}{10} + \frac{4}{10} =$	$1\frac{}{10}$
12.	$\frac{3}{8} + \frac{2}{8} =$		34.	$\frac{6}{10} + \frac{6}{10} + \frac{6}{10} =$	$1\frac{}{10}$
13.	$3 + 2 + 2 =$		35.	$2 + 2 + 2 =$	
14.	$\frac{3}{8} + \frac{2}{8} + \frac{2}{8} =$		36.	$\frac{2}{6} + \frac{2}{6} + \frac{2}{6} =$	sixths
15.	$\frac{3}{8} + \frac{3}{8} + \frac{2}{8} =$	eighths	37.	$\frac{2}{6} + \frac{2}{6} + \frac{2}{6} =$	
16.	$\frac{8}{8} =$		38.	$\frac{3}{6} + \frac{3}{6} + \frac{3}{6} =$	$1\frac{}{6}$
17.	$\frac{3}{8} + \frac{3}{8} + \frac{2}{8} =$		39.	$\frac{5}{12} + \frac{2}{12} + \frac{4}{12} =$	
18.	$2 + 1 + 1 =$		40.	$\frac{4}{12} + \frac{4}{12} + \frac{4}{12} =$	
19.	$\frac{2}{3} + \frac{1}{3} + \frac{1}{3} =$	thirds	41.	$\frac{5}{12} + \frac{5}{12} + \frac{7}{12} =$	$1\frac{}{12}$
20.	$\frac{2}{3} + \frac{1}{3} + \frac{1}{3} =$	$1\frac{}{3}$	42.	$\frac{7}{12} + \frac{9}{12} + \frac{7}{12} =$	$1\frac{}{12}$
21.	$2 + 2 + 2 =$		43.	$\frac{7}{15} + \frac{8}{15} + \frac{7}{15} =$	$1\frac{}{15}$
22.	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} =$	fifths	44.	$\frac{12}{15} + \frac{8}{15} + \frac{9}{15} =$	$1\frac{}{15}$

Lesson 22: Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.
Date: 10/20/14

engage^ny

5.E.10

B

Add Fractions

1.	$1 + 1 =$	
2.	$\frac{1}{6} + \frac{1}{6} =$	
3.	$3 + 1 =$	
4.	$\frac{3}{6} + \frac{1}{6} =$	
5.	$3 + 2 =$	
6.	$\frac{3}{6} + \frac{2}{6} =$	
7.	$4 + 2 =$	
8.	$\frac{4}{6} + \frac{2}{6} =$	sixths
9.	$\frac{6}{6} =$	
10.	$\frac{4}{6} + \frac{2}{6} =$	
11.	$5 + 2 =$	
12.	$\frac{5}{8} + \frac{2}{8} =$	
13.	$5 + 1 + 1 =$	
14.	$\frac{5}{8} + \frac{1}{8} + \frac{1}{8} =$	
15.	$\frac{5}{8} + \frac{2}{8} + \frac{1}{8} =$	eighths
16.	$\frac{8}{8} =$	
17.	$\frac{3}{8} + \frac{3}{8} + \frac{2}{8} =$	
18.	$1 + 1 + 2 =$	
19.	$\frac{1}{3} + \frac{1}{3} + \frac{2}{3} =$	thirds
20.	$\frac{1}{3} + \frac{1}{3} + \frac{2}{3} =$	$1\frac{}{3}$
21.	$3 + 3 + 3 =$	
22.	$\frac{3}{8} + \frac{3}{8} + \frac{3}{8} =$	eighths

23.	$\frac{3}{8} + \frac{3}{8} + \frac{3}{8} =$	$1\frac{}{8}$
24.	$1 + 1 + 1 =$	
25.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	halves
26.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	$1\frac{}{2}$
27.	$2 + 2 + 2 =$	
28.	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} =$	fifths
29.	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} =$	$1\frac{}{5}$
30.	$\frac{3}{5} + \frac{3}{5} + \frac{3}{5} =$	$1\frac{}{5}$
31.	$6 + 6 + 6 =$	
32.	$\frac{6}{10} + \frac{6}{10} + \frac{6}{10} =$	tenths
33.	$\frac{6}{10} + \frac{6}{10} + \frac{6}{10} =$	$1\frac{}{10}$
34.	$\frac{5}{10} + \frac{5}{10} + \frac{5}{10} =$	$1\frac{}{10}$
35.	$2 + 2 + 2 =$	
36.	$\frac{2}{6} + \frac{2}{6} + \frac{2}{6} =$	sixths
37.	$\frac{2}{6} + \frac{2}{6} + \frac{2}{6} =$	
38.	$\frac{3}{6} + \frac{3}{6} + \frac{3}{6} =$	$1\frac{}{6}$
39.	$\frac{5}{12} + \frac{3}{12} + \frac{3}{12} =$	
40.	$\frac{5}{12} + \frac{5}{12} + \frac{2}{12} =$	
41.	$\frac{6}{12} + \frac{5}{12} + \frac{6}{12} =$	$1\frac{}{12}$
42.	$\frac{8}{12} + \frac{10}{12} + \frac{5}{12} =$	$1\frac{}{12}$
43.	$\frac{7}{15} + \frac{7}{15} + \frac{8}{15} =$	$1\frac{}{15}$
44.	$\frac{13}{15} + \frac{9}{15} + \frac{7}{15} =$	$1\frac{}{15}$

COMMON CORE | **Lesson 22:** Add a fraction less than 1 to, or subtract a fraction less than 1 from, a whole number using decomposition and visual models.

Date: 10/20/14

engage^ny 5.E.11

A

Number Correct: _____

Change Fractions to Mixed Numbers

1.	$3 = 2 +$ ___		23.	$\frac{6}{3} =$	
2.	$\frac{3}{2} = \frac{2}{2} + \frac{}{2}$		24.	$\frac{}{3} = \frac{6}{3} + \frac{2}{3}$	
3.	$\frac{3}{2} = 1 + \frac{}{2}$		25.	$\frac{8}{3} = \frac{6}{3} + \frac{}{3}$	
4.	$\frac{3}{2} = 1\frac{}{2}$		26.	$\frac{8}{3} = 2 + \frac{}{3}$	
5.	$5 = 4 +$ ___		27.	$\frac{8}{3} = 2\frac{}{3}$	
6.	$\frac{5}{4} = \frac{4}{4} + \frac{}{4}$		28.	$\frac{}{4} = \frac{8}{4} + \frac{1}{4}$	
7.	$\frac{5}{4} = 1 + \frac{}{4}$		29.	$\frac{}{4} = 2 + \frac{1}{4}$	
8.	$\frac{5}{4} = 1\frac{}{4}$		30.	$\frac{9}{4} = ---\frac{1}{4}$	
9.	$4 =$ ___ $+ 1$		31.	$\frac{11}{4} = ---\frac{3}{4}$	
10.	$\frac{4}{3} = \frac{}{3} + \frac{1}{3}$		32.	$\frac{8}{3} = \frac{}{3} + \frac{2}{3}$	
11.	$\frac{4}{3} = 1 + \frac{}{3}$		33.	$\frac{8}{3} = \frac{6}{3} + \frac{}{3}$	
12.	$\frac{4}{3} = ---\frac{1}{3}$		34.	$\frac{8}{3} = --- + \frac{2}{3}$	
13.	$7 =$ ___ $+ 2$		35.	$\frac{8}{3} = ---\frac{2}{3}$	
14.	$\frac{7}{5} = \frac{}{5} + \frac{2}{5}$		36.	$\frac{14}{5} = \frac{10}{5} + \frac{}{5}$	
15.	$\frac{7}{5} = 1 + \frac{}{5}$		37.	$\frac{14}{5} = --- + \frac{4}{5}$	
16.	$\frac{7}{5} = 1\frac{}{5}$		38.	$\frac{14}{5} = 2\frac{}{5}$	
17.	$\frac{8}{5} = 1\frac{}{5}$		39.	$\frac{13}{5} = 2\frac{}{5}$	
18.	$\frac{9}{5} = 1\frac{}{5}$		40.	$\frac{9}{8} = 1 + \frac{}{8}$	
19.	$\frac{6}{5} = 1\frac{}{5}$		41.	$\frac{15}{8} = 1 + \frac{}{8}$	
20.	$\frac{10}{5} =$		42.	$\frac{17}{12} = \frac{}{12} + \frac{5}{12}$	
21.	$\frac{}{5} = \frac{10}{5} + \frac{1}{5}$		43.	$\frac{11}{8} = 1 + \frac{}{8}$	
22.	$\frac{}{5} = 2 + \frac{1}{5}$		44.	$\frac{17}{12} = 1 + \frac{}{12}$	

B

Number Correct: _____

Improvement: _____

Change Fractions to Mixed Numbers

1.	$6 = 5 +$ ___	
2.	$\frac{6}{5} = \frac{5}{5} + \frac{}{5}$	
3.	$\frac{6}{5} = 1 + \frac{}{5}$	
4.	$\frac{6}{5} = 1\frac{}{5}$	
5.	$4 = 3 +$ ___	
6.	$\frac{4}{3} = \frac{3}{3} + \frac{}{3}$	
7.	$\frac{4}{3} = 1 + \frac{}{3}$	
8.	$\frac{4}{3} = 1\frac{}{3}$	
9.	$5 =$ ___ $+ 1$	
10.	$\frac{5}{4} = \frac{}{4} + \frac{1}{4}$	
11.	$\frac{5}{4} = 1 + \frac{}{4}$	
12.	$\frac{5}{4} = \frac{}{4}$ $\frac{1}{4}$	
13.	$8 =$ ___ $+ 3$	
14.	$\frac{8}{5} = \frac{}{5} + \frac{3}{5}$	
15.	$\frac{8}{5} = 1 + \frac{}{5}$	
16.	$\frac{8}{5} = 1\frac{}{5}$	
17.	$\frac{9}{5} = 1\frac{}{5}$	
18.	$\frac{6}{5} = 1\frac{}{5}$	
19.	$\frac{7}{5} = 1\frac{}{5}$	
20.	$\frac{6}{3} =$	
21.	$\frac{}{3} = \frac{6}{3} + \frac{1}{3}$	
22.	$\frac{}{3} = 2 + \frac{1}{3}$	

23.	$\frac{4}{2} =$	
24.	$\frac{}{2} = \frac{4}{2} + \frac{1}{2}$	
25.	$\frac{5}{2} = \frac{4}{2} + \frac{}{2}$	
26.	$\frac{5}{2} = 2 + \frac{}{2}$	
27.	$\frac{5}{2} = 2\frac{}{2}$	
28.	$\frac{}{5} = \frac{10}{5} + \frac{1}{5}$	
29.	$\frac{}{5} = 2 + \frac{1}{5}$	
30.	$\frac{11}{5} = $ ___ $\frac{1}{5}$	
31.	$\frac{13}{5} = $ ___ $\frac{3}{5}$	
32.	$\frac{5}{3} = \frac{}{3} + \frac{1}{3}$	
33.	$\frac{5}{2} = \frac{4}{2} + \frac{}{2}$	
34.	$\frac{5}{2} = $ ___ $+ \frac{1}{2}$	
35.	$\frac{5}{2} = $ ___ $\frac{1}{2}$	
36.	$\frac{12}{5} = \frac{10}{5} + \frac{}{5}$	
37.	$\frac{12}{5} = $ ___ $+ \frac{2}{5}$	
38.	$\frac{12}{5} = 2\frac{}{5}$	
39.	$\frac{14}{5} = 2\frac{}{5}$	
40.	$\frac{9}{8} = 1 + \frac{}{8}$	
41.	$\frac{11}{8} = 1 + \frac{}{8}$	
42.	$\frac{19}{12} = \frac{}{12} + \frac{7}{12}$	
43.	$\frac{15}{8} = 1 + \frac{}{8}$	
44.	$\frac{19}{12} = 1 + \frac{}{12}$	

Lesson 30: Add a mixed number and a fraction.
Date: 10/20/14

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5.F.21

A

Number Correct: _____

Change Fractions to Mixed Numbers

1.	$3 + 1 =$	
2.	$\frac{3}{3} + \frac{1}{3} = \frac{}{3}$	
3.	$1 + \frac{1}{3} = \frac{}{3}$	
4.	$1\frac{1}{3} = \frac{}{3}$	
5.	$5 + 1 =$	
6.	$\frac{5}{5} + \frac{1}{5} = \frac{}{5}$	
7.	$1 + \frac{1}{5} = \frac{}{5}$	
8.	$1\frac{1}{5} = \frac{}{5}$	
9.	$2 + 1 =$	
10.	$\frac{2}{2} + \frac{1}{2} = \frac{}{2}$	
11.	$1 + \frac{1}{2} = \frac{}{2}$	
12.	$1\frac{1}{2} = \frac{}{2}$	
13.	$\frac{4}{4} + \frac{1}{4} = \frac{}{4}$	
14.	$1 + \frac{1}{4} = \frac{}{4}$	
15.	$1\frac{1}{4} = \frac{}{4}$	
16.	$1\frac{3}{4} = \frac{}{4}$	
17.	$\frac{5}{5} + \frac{1}{5} = \frac{}{5}$	
18.	$1 + \frac{1}{5} = \frac{}{5}$	
19.	$1\frac{1}{5} = \frac{}{5}$	
20.	$1\frac{3}{5} = \frac{}{5}$	
21.	$\frac{8}{8} + \frac{3}{8} = \frac{}{8}$	
22.	$1 + \frac{3}{8} = \frac{}{8}$	

23.	$1\frac{3}{8} = \frac{}{8}$	
24.	$2 + \frac{1}{3} = 2\frac{}{3}$	
25.	$\frac{6}{3} + \frac{1}{3} = \frac{}{3}$	
26.	$2 + \frac{1}{3} = \frac{}{3}$	
27.	$2\frac{1}{3} = \frac{}{3}$	
28.	$2 + \frac{1}{5} = 2\frac{}{5}$	
29.	$\frac{10}{5} + \frac{1}{5} = \frac{}{5}$	
30.	$2 + \frac{1}{5} = \frac{}{5}$	
31.	$2\frac{1}{5} = \frac{}{5}$	
32.	$\frac{8}{4} + \frac{3}{4} = \frac{}{4}$	
33.	$2 + \frac{3}{4} = \frac{}{4}$	
34.	$2\frac{3}{4} = \frac{}{4}$	
35.	$\frac{12}{3} + \frac{2}{3} = \frac{}{3}$	
36.	$4 + \frac{2}{3} = \frac{}{3}$	
37.	$4\frac{2}{3} = \frac{}{3}$	
38.	$3 + \frac{3}{5} = \frac{}{5}$	
39.	$3 + \frac{1}{2} = \frac{}{2}$	
40.	$4 + \frac{3}{4} = \frac{}{4}$	
41.	$2 + \frac{1}{6} = \frac{}{6}$	
42.	$2 + \frac{5}{8} = \frac{}{8}$	
43.	$2\frac{4}{5} = \frac{}{5}$	
44.	$3\frac{7}{8} = \frac{}{8}$	

B

Change Fractions to Mixed Numbers

1.	$4 + 1 =$	
2.	$\frac{4}{4} + \frac{1}{4} = \frac{}{4}$	
3.	$1 + \frac{1}{4} = \frac{}{4}$	
4.	$1\frac{1}{4} = \frac{}{4}$	
5.	$2 + 1 =$	
6.	$\frac{2}{2} + \frac{1}{2} = \frac{}{2}$	
7.	$1 + \frac{1}{2} = \frac{}{2}$	
8.	$1\frac{1}{2} = \frac{}{2}$	
9.	$5 + 1 =$	
10.	$\frac{5}{5} + \frac{1}{5} = \frac{}{5}$	
11.	$1 + \frac{1}{5} = \frac{}{5}$	
12.	$1\frac{1}{5} = \frac{}{5}$	
13.	$\frac{3}{3} + \frac{1}{3} = \frac{}{3}$	
14.	$1 + \frac{1}{3} = \frac{}{3}$	
15.	$1\frac{1}{3} = \frac{}{3}$	
16.	$1\frac{2}{3} = \frac{}{3}$	
17.	$\frac{10}{10} + \frac{1}{10} = \frac{}{10}$	
18.	$1 + \frac{1}{10} = \frac{}{10}$	
19.	$1\frac{1}{10} = \frac{}{10}$	
20.	$1\frac{7}{10} = \frac{}{10}$	
21.	$\frac{8}{8} + \frac{5}{8} = \frac{}{8}$	
22.	$1 + \frac{5}{8} = \frac{}{8}$	

23.	$1\frac{5}{8} = \frac{}{8}$	
24.	$2 + \frac{1}{2} = 2\frac{}{2}$	
25.	$\frac{4}{2} + \frac{1}{2} = \frac{}{2}$	
26.	$2 + \frac{1}{2} = \frac{}{2}$	
27.	$2\frac{1}{2} = \frac{}{2}$	
28.	$2 + \frac{1}{4} = 2\frac{}{4}$	
29.	$\frac{8}{4} + \frac{1}{4} = \frac{}{4}$	
30.	$2 + \frac{1}{4} = \frac{}{4}$	
31.	$2\frac{1}{4} = \frac{}{4}$	
32.	$\frac{6}{3} + \frac{2}{3} = \frac{}{3}$	
33.	$2 + \frac{2}{3} = \frac{}{3}$	
34.	$2\frac{2}{3} = \frac{}{3}$	
35.	$\frac{12}{4} + \frac{3}{4} = \frac{}{4}$	
36.	$3 + \frac{3}{4} = \frac{}{4}$	
37.	$3\frac{3}{4} = \frac{}{4}$	
38.	$3 + \frac{4}{5} = \frac{}{5}$	
39.	$4 + \frac{1}{2} = \frac{}{2}$	
40.	$4 + \frac{2}{3} = \frac{}{3}$	
41.	$3 + \frac{1}{6} = \frac{}{6}$	
42.	$2 + \frac{7}{8} = \frac{}{8}$	
43.	$2\frac{3}{5} = \frac{}{5}$	
44.	$2\frac{7}{8} = \frac{}{8}$	

A

Number Correct: _____

Change Mixed Numbers to Fractions

1.	$2 + 1 =$		23.	$1\frac{5}{6} = \frac{}{6}$	
2.	$\frac{2}{2} + \frac{1}{2} = \frac{}{2}$		24.	$2 + \frac{1}{2} = 2\frac{}{2}$	
3.	$1 + \frac{1}{2} = \frac{}{2}$		25.	$\frac{4}{2} + \frac{1}{2} = \frac{}{2}$	
4.	$1\frac{1}{2} = \frac{}{2}$		26.	$2 + \frac{1}{2} = \frac{}{2}$	
5.	$4 + 1 =$		27.	$2\frac{1}{2} = \frac{}{2}$	
6.	$\frac{4}{4} + \frac{1}{4} = \frac{}{4}$		28.	$2 + \frac{1}{4} = 2\frac{}{4}$	
7.	$1 + \frac{1}{4} = \frac{}{4}$		29.	$\frac{8}{4} + \frac{1}{4} = \frac{}{4}$	
8.	$1\frac{1}{4} = \frac{}{4}$		30.	$2 + \frac{1}{4} = \frac{}{4}$	
9.	$3 + 1 =$		31.	$2\frac{1}{4} = \frac{}{4}$	
10.	$\frac{3}{3} + \frac{1}{3} = \frac{}{3}$		32.	$\frac{9}{3} + \frac{2}{3} = \frac{}{3}$	
11.	$1 + \frac{1}{3} = \frac{}{3}$		33.	$3 + \frac{2}{3} = \frac{}{3}$	
12.	$1\frac{1}{3} = \frac{}{3}$		34.	$3\frac{2}{3} = \frac{}{3}$	
13.	$\frac{5}{5} + \frac{1}{5} = \frac{}{5}$		35.	$\frac{16}{4} + \frac{3}{4} = \frac{}{4}$	
14.	$1 + \frac{1}{5} = \frac{}{5}$		36.	$4 + \frac{3}{4} = \frac{}{4}$	
15.	$1\frac{1}{5} = \frac{}{5}$		37.	$4\frac{3}{4} = \frac{}{4}$	
16.	$1\frac{2}{5} = \frac{}{5}$		38.	$3 + \frac{2}{5} = \frac{}{5}$	
17.	$1\frac{4}{5} = \frac{}{5}$		39.	$4 + \frac{1}{2} = \frac{}{2}$	
18.	$1\frac{3}{5} = \frac{}{5}$		40.	$3 + \frac{3}{4} = \frac{}{4}$	
19.	$\frac{4}{4} + \frac{3}{4} = \frac{}{4}$		41.	$3 + \frac{1}{6} = \frac{}{6}$	
20.	$1 + \frac{3}{4} = \frac{}{4}$		42.	$3 + \frac{5}{8} = \frac{}{8}$	
21.	$\frac{6}{6} + \frac{5}{6} = \frac{}{6}$		43.	$3\frac{4}{5} = \frac{}{5}$	
22.	$1 + \frac{5}{6} = \frac{}{6}$		44.	$4\frac{7}{8} = \frac{}{8}$	

COMMON CORE™

| **Lesson 33:** | Subtract a mixed number from a mixed number. |
| **Date:** | 10/20/14 |

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5.F.57

B

Change Mixed Numbers to Fractions

1.	$5 + 1 =$	
2.	$\frac{5}{5} + \frac{1}{5} = \frac{}{5}$	
3.	$1 + \frac{1}{5} = \frac{}{5}$	
4.	$1\frac{1}{5} = \frac{}{5}$	
5.	$3 + 1 =$	
6.	$\frac{3}{3} + \frac{1}{3} = \frac{}{3}$	
7.	$1 + \frac{1}{3} = \frac{}{3}$	
8.	$1\frac{1}{3} = \frac{}{3}$	
9.	$4 + 1 =$	
10.	$\frac{4}{4} + \frac{1}{4} = \frac{}{4}$	
11.	$1 + \frac{1}{4} = \frac{}{4}$	
12.	$1\frac{1}{4} = \frac{}{4}$	
13.	$\frac{10}{10} + \frac{1}{10} = \frac{}{10}$	
14.	$1 + \frac{1}{10} = \frac{}{10}$	
15.	$1\frac{1}{10} = \frac{}{10}$	
16.	$1\frac{2}{10} = \frac{}{10}$	
17.	$1\frac{4}{10} = \frac{}{10}$	
18.	$1\frac{3}{10} = \frac{}{10}$	
19.	$\frac{3}{3} + \frac{2}{3} = \frac{}{3}$	
20.	$1 + \frac{2}{3} = \frac{}{3}$	
21.	$\frac{8}{8} + \frac{7}{8} = \frac{}{8}$	
22.	$1 + \frac{7}{8} = \frac{}{8}$	

23.	$1\frac{7}{8} = \frac{}{8}$	
24.	$2 + \frac{1}{2} = 2\frac{}{2}$	
25.	$\frac{4}{2} + \frac{1}{2} = \frac{}{2}$	
26.	$2 + \frac{1}{2} = \frac{}{2}$	
27.	$2\frac{1}{2} = \frac{}{2}$	
28.	$2 + \frac{1}{3} = 2\frac{}{3}$	
29.	$\frac{6}{3} + \frac{1}{3} = \frac{}{3}$	
30.	$2 + \frac{1}{3} = \frac{}{3}$	
31.	$2\frac{1}{3} = \frac{}{3}$	
32.	$\frac{12}{4} + \frac{3}{4} = \frac{}{4}$	
33.	$3 + \frac{3}{4} = \frac{}{4}$	
34.	$3\frac{3}{4} = \frac{}{4}$	
35.	$\frac{12}{3} + \frac{2}{3} = \frac{}{3}$	
36.	$4 + \frac{2}{3} = \frac{}{3}$	
37.	$4\frac{2}{3} = \frac{}{3}$	
38.	$3 + \frac{3}{5} = \frac{}{5}$	
39.	$5 + \frac{1}{2} = \frac{}{2}$	
40.	$3 + \frac{2}{3} = \frac{}{3}$	
41.	$3 + \frac{1}{8} = \frac{}{8}$	
42.	$3 + \frac{1}{6} = \frac{}{6}$	
43.	$3\frac{2}{5} = \frac{}{5}$	
44.	$4\frac{5}{6} = \frac{}{6}$	

A

Number Correct: _____

Change Mixed Numbers to Fractions

1.	$4 = 3 +$ ___		23.	$\frac{8}{4} =$	
2.	$\frac{4}{3} = \frac{3}{3} + \frac{}{3}$		24.	$\frac{}{4} = \frac{8}{4} + \frac{3}{4}$	
3.	$\frac{4}{3} = 1 + \frac{}{3}$		25.	$\frac{11}{4} = \frac{8}{4} + \frac{}{4}$	
4.	$\frac{4}{3} = 1\frac{}{3}$		26.	$\frac{11}{4} = 2 + \frac{}{4}$	
5.	$6 = 5 +$ ___		27.	$\frac{11}{4} = 2\frac{}{4}$	
6.	$\frac{6}{5} = \frac{5}{5} + \frac{}{5}$		28.	$\frac{}{3} = \frac{6}{3} + \frac{1}{3}$	
7.	$\frac{6}{5} = 1 + \frac{}{5}$		29.	$\frac{}{3} = 2 + \frac{1}{3}$	
8.	$\frac{6}{5} = 1\frac{}{5}$		30.	$\frac{7}{3} = \frac{}{3}\frac{1}{3}$	
9.	$5 =$ ___ $+ 1$		31.	$\frac{8}{3} = \frac{}{3}\frac{2}{3}$	
10.	$\frac{5}{4} = \frac{}{4} + \frac{1}{4}$		32.	$\frac{17}{5} = \frac{}{5} + \frac{2}{5}$	
11.	$\frac{5}{4} = 1 + \frac{}{4}$		33.	$\frac{17}{5} = \frac{15}{5} + \frac{}{5}$	
12.	$\frac{5}{4} = \frac{}{4}\frac{1}{4}$		34.	$\frac{17}{5} = \frac{}{} + \frac{2}{5}$	
13.	$8 =$ ___ $+ 3$		35.	$\frac{17}{5} = \frac{}{}\frac{2}{5}$	
14.	$\frac{8}{5} = \frac{}{5} + \frac{3}{5}$		36.	$\frac{13}{6} = \frac{12}{6} + \frac{}{6}$	
15.	$\frac{8}{5} = 1 + \frac{}{5}$		37.	$\frac{13}{6} = \frac{}{} + \frac{1}{6}$	
16.	$\frac{8}{5} = 1\frac{}{5}$		38.	$\frac{13}{6} = 2\frac{}{6}$	
17.	$\frac{7}{5} = 1\frac{}{5}$		39.	$\frac{17}{6} = 2\frac{}{6}$	
18.	$\frac{6}{5} = 1\frac{}{5}$		40.	$\frac{9}{8} = 1 + \frac{}{8}$	
19.	$\frac{9}{5} = 1\frac{}{5}$		41.	$\frac{13}{8} = 1 + \frac{}{8}$	
20.	$\frac{10}{5} =$		42.	$\frac{19}{10} = 1 + \frac{}{10}$	
21.	$\frac{}{5} = \frac{10}{5} + \frac{4}{5}$		43.	$\frac{19}{12} = \frac{}{12} + \frac{7}{12}$	
22.	$\frac{}{5} = 2 + \frac{4}{5}$		44.	$\frac{11}{6} = 1 + \frac{}{6}$	

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Lesson 34: Subtract mixed numbers.
Date: 10/20/14

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5.F.69

B

Change Mixed Numbers to Fractions

1.	$5 = 4 + $ ___		23.	$\frac{6}{3} = $	
2.	$\frac{5}{4} = \frac{4}{4} + \frac{}{4}$		24.	$\frac{}{3} = \frac{6}{3} + \frac{2}{3}$	
3.	$\frac{5}{4} = 1 + \frac{}{4}$		25.	$\frac{8}{3} = \frac{6}{3} + \frac{}{3}$	
4.	$\frac{5}{4} = 1\frac{}{4}$		26.	$\frac{8}{3} = 2 + \frac{}{3}$	
5.	$3 = 2 + $ ___		27.	$\frac{8}{3} = 2\frac{}{3}$	
6.	$\frac{3}{2} = \frac{2}{2} + \frac{}{2}$		28.	$\frac{}{10} = \frac{20}{10} + \frac{1}{10}$	
7.	$\frac{3}{2} = 1 + \frac{}{2}$		29.	$\frac{}{10} = 2 + \frac{1}{10}$	
8.	$\frac{3}{2} = 1\frac{}{2}$		30.	$\frac{21}{10} = \frac{}{10}\frac{1}{10}$	
9.	$9 = $ ___ $+ 1$		31.	$\frac{27}{10} = \frac{}{10}\frac{7}{10}$	
10.	$\frac{9}{8} = \frac{}{8} + \frac{1}{8}$		32.	$\frac{13}{6} = \frac{}{6} + \frac{1}{6}$	
11.	$\frac{9}{8} = 1 + \frac{}{8}$		33.	$\frac{13}{6} = \frac{12}{6} + \frac{}{6}$	
12.	$\frac{9}{8} = \frac{}{8}\frac{1}{8}$		34.	$\frac{13}{6} = \frac{}{} + \frac{1}{6}$	
13.	$9 = $ ___ $+ 4$		35.	$\frac{13}{6} = \frac{}{}\frac{1}{6}$	
14.	$\frac{9}{5} = \frac{}{5} + \frac{4}{5}$		36.	$\frac{17}{8} = \frac{16}{8} + \frac{}{8}$	
15.	$\frac{9}{5} = 1 + \frac{}{5}$		37.	$\frac{17}{8} = \frac{}{8} + \frac{1}{8}$	
16.	$\frac{9}{5} = 1\frac{}{5}$		38.	$\frac{17}{8} = 2\frac{}{8}$	
17.	$\frac{8}{5} = 1\frac{}{5}$		39.	$\frac{21}{8} = 2\frac{}{8}$	
18.	$\frac{7}{5} = 1\frac{}{5}$		40.	$\frac{7}{6} = 1 + \frac{}{6}$	
19.	$\frac{6}{5} = 1\frac{}{5}$		41.	$\frac{11}{6} = 1 + \frac{}{6}$	
20.	$\frac{8}{4} = $		42.	$\frac{13}{5} = 2 + \frac{}{5}$	
21.	$\frac{}{4} = \frac{8}{4} + \frac{1}{4}$		43.	$\frac{17}{12} = \frac{}{12} + \frac{5}{12}$	
22.	$\frac{}{4} = 2 + \frac{1}{4}$		44.	$\frac{13}{8} = 1 + \frac{}{8}$	

A

Number Correct: _____

Multiply Whole Numbers Times Fractions

1.	$\frac{1}{3} + \frac{1}{3} =$		23.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$	
2.	$2 \times \frac{1}{3} =$		24.	$4 \times \frac{1}{3} =$	
3.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		25.	$\frac{5}{6} =$	$\underline{\quad} \times \frac{1}{6}$
4.	$3 \times \frac{1}{4} =$		26.	$\frac{5}{6} =$	$5 \times \underline{\quad}$
5.	$\frac{1}{5} + \frac{1}{5} =$		27.	$\frac{5}{8} =$	$5 \times \underline{\quad}$
6.	$2 \times \frac{1}{5} =$		28.	$\frac{5}{8} =$	$\underline{\quad} \times \frac{1}{8}$
7.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		29.	$\frac{7}{8} =$	$7 \times \underline{\quad}$
8.	$3 \times \frac{1}{5} =$		30.	$\frac{7}{10} =$	$7 \times \underline{\quad}$
9.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		31.	$\frac{7}{8} =$	$\underline{\quad} \times \frac{1}{8}$
10.	$4 \times \frac{1}{5} =$		32.	$\frac{7}{10} =$	$\underline{\quad} \times \frac{1}{10}$
11.	$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$		33.	$\frac{6}{6} =$	$6 \times \underline{\quad}$
12.	$3 \times \frac{1}{10} =$		34.	$1 =$	$6 \times \underline{\quad}$
13.	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} =$		35.	$\frac{8}{8} =$	$\underline{\quad} \times \frac{1}{8}$
14.	$3 \times \frac{1}{8} =$		36.	$1 =$	$\underline{\quad} \times \frac{1}{8}$
15.	$\frac{1}{2} + \frac{1}{2} =$		37.	$9 \times \frac{1}{10} =$	
16.	$2 \times \frac{1}{2} =$		38.	$7 \times \frac{1}{5} =$	
17.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$		39.	$1 =$	$3 \times \underline{\quad}$
18.	$3 \times \frac{1}{3} =$		40.	$7 \times \frac{1}{12} =$	
19.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		41.	$1 =$	$\underline{\quad} \times \frac{1}{5}$
20.	$4 \times \frac{1}{4} =$		42.	$\frac{3}{5} =$	$\frac{1}{5} + \frac{1}{5} + \underline{\quad}$
21.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$		43.	$3 \times \frac{1}{4} =$	$\underline{\quad} + \frac{1}{4} + \frac{1}{4}$
22.	$3 \times \frac{1}{2} =$		44.	$1 =$	$\underline{\quad} + \underline{\quad} + \underline{\quad}$

B

Multiply Whole Numbers Times Fractions

1.	$\frac{1}{5} + \frac{1}{5} =$		23.	$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} =$	
2.	$2 \times \frac{1}{5} =$		24.	$3 \times \frac{1}{2} =$	
3.	$\frac{1}{3} + \frac{1}{3} =$		25.	$\frac{5}{6} =$	$\underline{\quad} \times \frac{1}{6}$
4.	$2 \times \frac{1}{3} =$		26.	$\frac{5}{6} =$	$5 \times \underline{\quad}$
5.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		27.	$\frac{5}{8} =$	$5 \times \underline{\quad}$
6.	$3 \times \frac{1}{4} =$		28.	$\frac{5}{8} =$	$\underline{\quad} \times \frac{1}{8}$
7.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		29.	$\frac{7}{8} =$	$7 \times \underline{\quad}$
8.	$3 \times \frac{1}{5} =$		30.	$\frac{7}{10} =$	$7 \times \underline{\quad}$
9.	$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} =$		31.	$\frac{7}{8} =$	$\underline{\quad} \times \frac{1}{8}$
10.	$4 \times \frac{1}{5} =$		32.	$\frac{7}{10} =$	$\underline{\quad} \times \frac{1}{10}$
11.	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} =$		33.	$\frac{8}{8} =$	$8 \times \underline{\quad}$
12.	$3 \times \frac{1}{8} =$		34.	$1 =$	$8 \times \underline{\quad}$
13.	$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$		35.	$\frac{6}{6} =$	$\underline{\quad} \times \frac{1}{6}$
14.	$3 \times \frac{1}{10} =$		36.	$1 =$	$\underline{\quad} \times \frac{1}{6}$
15.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$		37.	$5 \times \frac{1}{12} =$	
16.	$3 \times \frac{1}{3} =$		38.	$6 \times \frac{1}{5} =$	
17.	$\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$		39.	$1 =$	$4 \times \underline{\quad}$
18.	$4 \times \frac{1}{4} =$		40.	$9 \times \frac{1}{10} =$	
19.	$\frac{1}{2} + \frac{1}{2} =$		41.	$1 =$	$\underline{\quad} \times \frac{1}{3}$
20.	$2 \times \frac{1}{2} =$		42.	$\frac{3}{4} =$	$\frac{1}{4} + \frac{1}{4} + \underline{\quad}$
21.	$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} =$		43.	$3 \times \frac{1}{5} =$	$\underline{\quad} + \frac{1}{5} + \frac{1}{5}$
22.	$4 \times \frac{1}{3} =$		44.	$1 =$	$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$