# 5th Grade: Unit 2

Curriculum Map: October 28th – January 3rd

# Common Core Standards

| REVIEW OF GRADE 4 FLUENCY |
| --- |

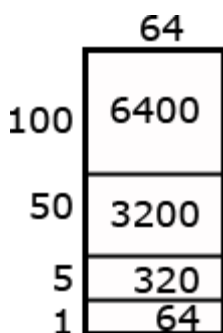| 4.NBT.4 | Fluently add and subtract multi digit whole numbers using the standard algorithm. |
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| EXPECTED 5TH GRADE FLUENCY |
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| 5.NBT.5 | Fluently multiply multi-digit whole numbers using standard algorithm. |
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|---|---|
| **GRADE 3 MEASUREMENT AND DATA** ||
| **5.NBT.3** | Read, write, and compare decimals to thousandths. <br><br> a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000). <br> b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. |
| Students build on the understanding they developed in fourth grade to read, write, and compare decimals to thousandths. They connect their prior experiences with using decimal notation for fractions and addition of fractions with denominators of 10 and 100. They use concrete models and number lines to extend this understanding to decimals to the thousandths. Models may include base ten blocks, place value charts, grids, pictures, drawings, manipulatives, technology-based, etc. They read decimals using fractional language and write decimals in fractional form, as well as in expanded notation as show in the standard 3a. This investigation leads them to understanding equivalence of decimals (0.8 = 0.80 = 0.800). ||
| **5.NBT.6** | Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. |

In fourth grade, students' experiences with division were limited to dividing by one-digit divisors. This standard extends students' prior experiences with strategies, illustrations, and explanations. When the two-digit divisor is a "familiar" number, a student might decompose the dividend using place value.

Example:
- Using expanded notation ~ 2682 ÷ 25 = (2000 + 600 + 80 + 2) ÷ 25
- Using his or her understanding of the relationship between 100 and 25, a student might think ~

  - I know that 100 divided by 25 is 4 so 200 divided by 25 is 8 and 2000 divided by 25 is 80.
  - 600 divided by 25 has to be 24.
  - since 3 x 25 is 75, I know that 80 divided by 25 is 3 with a reminder of 5. (Note that a student might divide into 82 and not 80)
  - I can't divide 2 by 25 so 2 plus the 5 leaves a remainder of 7. 80 + 24 + 3 = 107. So, the answer is 107 with a remainder of 7.

Using an equation that relates division to multiplication, 25 x *n* = 2682, a student might estimate the answer to be slightly larger than 100 because s/he recognizes that 25 x 100 = 2500.

Example: 968 ÷ 21
- Using base ten models, a student can represent 962 and use the models to make an array with one dimension of 21. The student continues to make the array until no more groups of 21 can be made. Remainders are not part of the array.
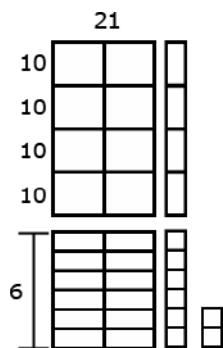
Example: 9984 ÷ 64

- An area model for division is shown below. As the student uses the area model, s/he keeps track of how much of the 9984 is left to divide.

$$64\overline{)9984}$$
$$-6400 \quad (100 \times 64)$$
$$3584$$
$$-3200 \quad (50 \times 64)$$
$$384$$
$$-320 \quad (5 \times 64)$$
$$64$$
$$-64 \quad (1 \times 64)$$
$$0$$

| **5.NBT.7** | Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. |
|---|---|

This standard requires students to extend the models and strategies they developed for whole numbers in grades 1-4 to decimal values. Before students are asked to give exact answers, they should estimate answers based on their understanding of operations and the value of the numbers.
Examples:
• 3.6 + 1.7
    A student might estimate the sum to be larger than 5 because 3.6 is more than 3 ½ and 1.7 is more than 1 ½.

• 5.4 – 0.8

> A student might estimate the answer to be a little more than 4.4 because a number less than 1 is being subtracted.

• 6 x 2.4

> A student might estimate an answer between 12 and 18 since 6 x 2 is 12 and 6 x 3 is 18. Another student might give an estimate of a little less than 15 because s/he figures the answer to be very close, but smaller than 6 x 2 ½ and think of 2 ½ groups of 6 as 12 (2 groups of 6) + 3 (½ of a group of 6).

Students should be able to express that when they add decimals they add tenths to tenths and hundredths to hundredths. So, when they are adding in a vertical format (numbers beneath each other), it is important that they write numbers with the same place value beneath each other. This understanding can be reinforced by connecting addition of decimals to their understanding of addition of fractions. Adding fractions with denominators of 10 and 100 is a standard in fourth grade.

| **5.G.3** | Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.* |
|---|---|

Geometric properties include properties of sides (parallel, perpendicular, congruent), properties of angles (type, measurement, congruent), and properties of symmetry (point and line).
Example:

• If the opposite sides on a parallelogram are parallel and congruent, then rectangles are parallelograms

A sample of questions that might be posed to students include:

• A parallelogram has 4 sides with both sets of opposite sides parallel. What types of quadrilaterals are parallelograms?

• Regular polygons have all of their sides and angles congruent. Name or draw some regular polygons.

• All rectangles have 4 right angles. Squares have 4 right angles so they are also rectangles.
True or False?

• A trapezoid has 2 sides parallel so it must be a parallelogram. True or False?

| | |
|---|---|
| | |
| **5.G.4** | Classify two-dimensional figures in a hierarchy based on properties. |

Properties of figure may include:
• Properties of sides—parallel, perpendicular, congruent, number of sides
• Properties of angles—types of angles, congruent
Examples:
• A right triangle can be both scalene and isosceles, but not equilateral.
• A scalene triangle can be right, acute and obtuse.
Triangles can be classified by:

• Angles
o Right: The triangle has one angle that measures 90º.
o Acute: The triangle has exactly three angles that measure between 0º and 90º.
o Obtuse: The triangle has exactly one angle that measures greater than 90º and less than 180º.

• Sides
o Equilateral: All sides of the triangle are the same length.
o Isosceles: At least two sides of the triangle are the same length.
o Scalene: No sides of the triangle are the same length.
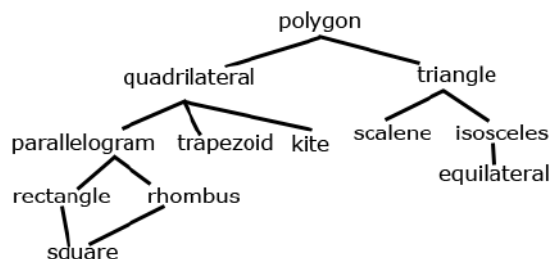


| | |
|---|---|
| **5.NF.1** | Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)* |

Students should apply their understanding of equivalent fractions developed in fourth grade and their ability to rewrite fractions in an equivalent form to find common denominators.

• Students should know that multiplying the denominators will always give a common denominator but may not result in the smallest denominator.

Examples:

$$\frac{2}{5} + \frac{7}{8} = \frac{16}{40} + \frac{35}{40} = \frac{51}{40}$$

$$3\frac{1}{4} - \frac{1}{6} = 3\frac{3}{12} - \frac{2}{12} = 3\frac{1}{12}$$

| | |
|---|---|
| | |
| **5.NF.3** | Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?* |

Students are expected to demonstrate their understanding using concrete materials, drawing models, and explaining their thinking when working with fractions in multiple contexts.

• Students will read 3/5 as "three fifths" and after many experiences with sharing problems, learn that 3/5 can also be interpreted as "3 divided by 5."

Examples:
• Ten team members are sharing 3 boxes of cookies. How much of a box will each student get?

When working this problem a student should recognize that the 3 boxes are being divided into 10 groups, so s/he is seeing the solution to the following equation, 10 x $n$ = 3 (10 groups of some amount is 3 boxes) which can also be written as n = 3 ÷ 10. Using models or diagram, they divide each box into 10 groups, resulting in each team member getting 3/10 of a box.

• Two afterschool clubs are having pizza parties. For the Math Club, the teacher will order 3 pizzas for every 5 students. For the student council, the teacher will order 5 pizzas for every 8 students. Since you are in both groups, you need to decide which party to attend. How much pizza would you get at each party? If you want to have the most pizza, which party should you attend?

• The six fifth grade classrooms have a total of 27 boxes of pencils. How many boxes will each classroom receive?

Students may recognize this as a whole number division problem but should also express this equal sharing problem as $\dfrac{27}{6}$ . They explain that each classroom gets $\dfrac{27}{6}$ boxes of pencils and can further determine that

each classroom get $4\dfrac{3}{6} or$ $4\dfrac{1}{2}$ boxes of pencils.

| **5.MD.2** | Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.* |
|---|---|

Ten beakers, measured in liters, are filled with a liquid.

**Liquid in Beakers**



Amount of Liquid (in Liters)
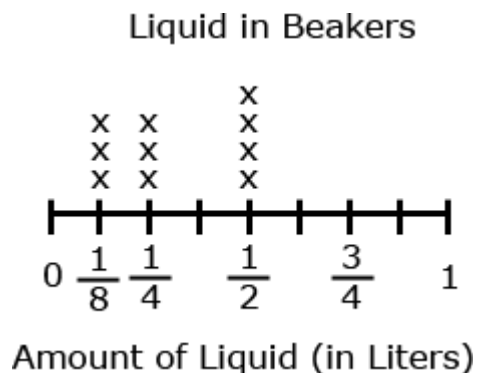
The line plot above shows the amount of liquid in liters in 10 beakers. If the liquid is redistributed equally, how much liquid would each beaker have? (This amount is the mean.) Students apply their understanding of operations with fractions. They use either addition and/or multiplication to determine the total number of liters in the beakers. Then the sum of the liters is shared evenly among the ten beakers.

# Model Curriculum Student Learning Objectives

| SLO/CCSS | Description | CCSS |
|:---:|:---|:---:|
| **1** | Compare decimals to thousandths based on the value of the digits in each place using the symbols >, =, < when presented as base ten numerals, number names, or expanded form. | 5.NBT.3 |
| **2** | Calculate whole number quotients with 4-digit dividends and 2-digit divisors and explain answers with equations, rectangular arrays, and area models. | 5.NBT.6 |
| **3** | Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition, subtraction, multiplication, and division. | 5.NBT.7 |
| **4** | Identify attributes of a two-dimensional shape based on attributes of the groups and categories in which the shape belongs. | 5.G.3 |
| **5** | Classify two- dimensional figures in a hierarchy based on properties. | 5.G.4 |
| **6** | Add and subtract fractions (including mixed numbers) with unlike denominators. | 5.NF.1 |
| **7** | Interpret a fraction as a division of the numerator by the denominator; solve word problems where division of whole numbers leads to fractional or mixed number answers. | 5.NF.3 |
| **8** | Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.* | 5.MD.2 |

# Potential Student Misconceptions

**Number and operations in Base Ten**

**Students may believe that decimals with more places must be greater than decimals with fewer places.**
While students may believe that 0.289 is greater than 0.9 because it has more places, but in reality it is not. An example is that 0.9 has fewer digits than 0.289, but 0.9 is greater.

**Students may compute the sums or differences of decimals using the traditional algorithm but disregard the decimal point.**

For example, to compute the sum of 15.34 + 12.9, students may write the problem in this manner:

  15.34
 + 12.9
  16.63

Have students estimate the sum before computing, and use their estimate to check whether their answer is reasonable. In this instance, an estimate might be 27, simply by combining the whole numbers. So an answer of 16.63 does not make sense. Additionally, have students represent the numbers using manipulatives or visual models to emphasize the meaning of the digits.

**Geometry**

**Students think that when describing geometric shapes and placing them in subcategories, the last category is the only classification that can be used.**
Pose questions such as, "Why is a square always a rectangle?" and "Why is a rectangle not always a square?"

## Numbers and Operations – Fractions

**Students may not understand that fractional parts must be equal amounts.**
Students may create fractions of circular regions by dividing them horizontally and vertically, creating unequal parts. Having students draw fractional models. Ask questions that focus students on the equality of parts. Having students cut out the parts and place them on top of each other may highlight this idea.

**Students may not realize that, in order to compare fractions with models, the wholes must be the same size.**
From time to time have students draw their own representations of the fractions they are comparing. Always giving students pre-made physical models can mask this misconception. Have students solve this problem: Fernando had ½ of a pizza and Lucy had 1/3 of a pizza. Lucy said that she had more pizza. Is she correct? If so, how could that be? If not, why not?

**Students may mix models when adding, subtracting, or comparing fractions. Students will use a circle for thirds and a rectangle for fourths when comparing fractions with thirds and fourths.**
Remind students that the representations need to be from the same whole.

**Students may believe that multiplication always results in a larger number. Students may also believe that division always results in a smaller number.**

Connect the meaning of multiplication and division of fractions with whole number multiplication and division. Consider area models of multiplication and both sharing and measuring models for division. Using models when multiplying with fractions will enable students to see that the results will be smaller. Using models when dividing with fractions will enable students to see that the results will be larger.

# Pacing Guide

| EDM Section 3,4,5, 6.1-6.4 | Common Core Standards/SLO | Additional Instructions/Notes |
|---|---|---|
| **3-3** Exploring Angle Measures | 5.NBT.5 Fluency | Mental Math and Reflexes Part 2 Only |
| **3-6** Congruent Triangles | 5.G.3 | Types of Triangles only Student Journal p. 75 |
| **3-7** Properties of Polygons | 5.G.3, 5.G.4 | Mental Math and Reflexes Part 1 & 2 Student journal p. 80 Polygon Capture Math Masters p. 87A/B, 88 Math Boxes p.81 Study Link p. 87 ELL Support: Play What's my Attribute Rule? |
| **3-8** Regular Tessellations | 5.G.3, 5.G.4 | Mental Math and Reflexes Part 1 (Quadrangles Only) Math Boxes p. 1-3, 5,6 Math Masters p. 87A |
| **3-11** Progress Check | | |
| **4-1** Division Facts and Extensions | 5.NBT.6 5.G.3 | Mental Math and Reflexes Part 1 & 2 Student Journal p. 99 Math Boxes p. 100 Math Masters p. 440A |
| **U1 3.1** | Solving a Division Problem | |
| **U1 3.6** | Practicing Division Strategies | |
| **U1 3.7** | Practicing Division Strategies (Cont'd) | |
| **4-2** The Partial Quotients Division Algorithm | 5.NBT.6 | Mental Math and Reflexes Math Message Part 1 & 2 Student Journal p. 101 Math Boxes p. 102# 1,2,3,5 Math Masters p. 104 |
| **4-4** Partial Quotients Algorithm Strategies | 5.NBT.6 | Mental Math and Reflexes Math Message Student Journal p. 107 Math Boxes p. 108 # 1,2,5 Math Masters p. 110 |
| **4-5** Division of Decimal Numbers | 5.NBT.7 | Mental Math and Reflexes |

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| | | Math Message<br>Part 1 & 2<br>Student Journal p. 109<br>Math boxes p, 110 # 1,4-6<br>Math Masters p. 113<br>For struggling Students: Part 3<br>Readiness Activity |
| **CC U6 3A.5** | Dividing Powers of 10 | |
| **CC U6 3A.6** | Dividing Decimals | |
| **CC U6 3A.7** | Multiplying and Dividing Decimals | |
| **4-6** Interpreting the Remainder | 5.NBT.6<br>5.NBT.7 | Mental Math and Reflexes<br>Math Message<br>Part 1<br>Student Journal p. 112/113<br>Math Boxes p. 114 #1,2,5<br>HW: Illustrative Mathematics<br>"What is 23 divided by 5?" |
| **4-7** Skills Review with First to 100 | | Mental Math and Reflexes<br>Part 2<br>Student Journal p. 115<br>Math Boxes p. 117 # 1, 4, 5, 6<br>Part 3 Extra Practice |
| **4-8** Progress Check | | |
| **5-1** Fraction Review | 5.NF.3 | Mental Math and Reflexes<br>Math Message<br>Part 1 & 2<br>Student Journal p.122<br>Math Boxes p. 123#1,2,4<br>Math masters p. 125 |
| **U6 1.7** | Fractions as Division | |
| **5-2** Mixed Numbers | Fraction Review | Mental Math and Reflexes<br>Math Message<br>Part 1, 2, & 3 (Extra Practice)<br>Student Journal p.125-127<br>Math Boxes p. 128# 1, 6<br>Math Masters p.127/128 |
| **5-3** Comparing and Ordering Fractions | 5.NF.1 | Mental Math and Reflexes<br>Math Message<br>Part 1 & 2<br>Student Journal p.132<br>Math boxes p. 133#1, 2, 4<br>Math Masters p. 130/131 |
| **5-4** Two rules for finding equivalent fractions | Review of Equivalent Fractions | Mental Math and Reflexes<br>Part 1 & 2<br>Student Journal p.135<br>Math Boxes p. 136#1<br>Math Master p. 132 /133 |

| | | |
|---|---|---|
| **5-5** Fractions and Decimals: Part 1 | 5.NBT.3 | Mental Math and Reflexes<br>Math Message<br>Student Journal p. 137-140<br>Math Boxes p. 141<br>Math Masters p. 134-136 |
| **5-6 Fractions and Decimals: Part 2** | 5.NBT.3<br>5.NF.3 | Mental Math and Reflexes<br>Math Message<br>Part 1 & 2<br>Part 3 (Enrichment)<br>Student Journal p.142/143<br>Math boxes |
| **5-7 Fractions and Decimals: Part 3** | 5.NBT.3 | Mental Math and Reflexes<br>Math Message<br>Part 1<br>Student Journal p.145<br>Math Boxes p.146<br>Math Masters p. 142 |
| **5-13**<br>**Progress Check** | | |
| **6-1** | 5.MD.2 | Mental Math and Reflexes<br>Take inventory of the States students have visited and use it in this lesson<br>Student Journal p. 164/165<br>Math Boxes p. 167 # 1,3 |
| **Activity** | 5.MD.2 | Line Plot Activity |
| **6-2** | 5.NBT.3a | Mental Math and Reflexes\<br>Only<br><br>Student Journal P. 172 # 1-4, 6 |
| **6-4** | 5.NBT.3 | Mental Math and Reflexes<br>Student Journal P. 179 # 1-4, 6<br><br>Part 1 Only |

# Assessment Checks

**5.NBT.3**

| Problem: | Things to Remember: |
|---|---|
| Some equivalent forms of 0.72 are?<br><br>Answer:<br><br>$\frac{72}{100}, \frac{70}{100} + \frac{2}{100}, 0.70 + 0.02$ | _____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____<br>_____ |

*Instructions: Answer each question.*

1. Fill in the blank with a <, >, or = symbol that makes the statement correct.
   0.25 _____ 0.57
       Answer:

2. Which is an equivalent form of .23?
   a. $\frac{1}{23}$
   b. $\frac{23}{100}$
   c. 2.3
   Answer:

3. Fill in the blank with a <, >, or = symbol that makes the statement correct.
   0.34 _____ 0.308
       Answer:

**5.NBT.6**

Problem:

$9984 \div 64$

Answer: 156

```
6 4 | 9 9 8 4
    - 6 4 0 0
      3 5 8 4
    - 3 2 0 0
        3 8 4
      - 3 2 0
          6 4
        - 6 4
            0
```

Notes on Common Core 5.NBT.6:

Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

*Instructions: Divide. Show your work in the space provided. Use remainders if necessary.*

1.  478
```
1 4 | 6 6 9 2
```

2.  41
```
4 8 | 1 9 6 8
```

3.  107 R 7
```
2 5 | 2 6 8 2
```

**5.NBT.7**

Problem:
5.4 − 0.8

Answer:
Estimate the answer to be a little more than 4.4 because a number less than 1 is being subtracted.

Final answer: 4.6

Things to Remember:
_____
_____
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_____
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_____
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_____
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_____
_____
_____

Instructions: Solve the following problems.

1.  3.6 x 4.2 =
    Answer:

2.  9.8 + 4.5 =
    Answer:

3.  13.4 − 6.2 =
    Answer:

**5.G.3**

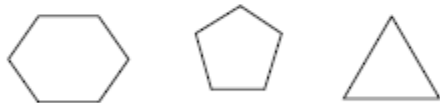| Problem: | Notes on Common Core 5. G. 3: |
|---|---|
| All rectangles have 4 right angles. Squares have 4 right angles so they are also rectangles. True or False? | Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. |
| Answer:<br>True | *For example,* |

- *All rectangles have four right angles and squares are rectangles, so all squares have four right angles.*

*Instructions: Answer the following questions.*

1. Regular polygons have all of their sides and angles congruent. Name or draw some regular polygons.
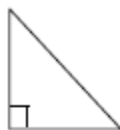   Answer: Hexagon, Pentagon, Triangle, etc



2. A parallelogram has 4 sides with both sets of opposite sides parallel. What types of quadrilaterals are parallelograms?
   Answer: Square, rectangle, rhombus

**5.G.4**

Problem:

Classify the triangle below.



Answer: Right triangle
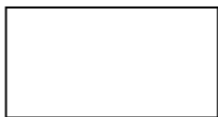
Notes on Common Core 5. G. 4:

Classify two-dimensional figures in a hierarchy based on properties.

*For example,*

- Properties of figure may include:
  - Properties of sides—parallel, perpendicular, congruent, number of sides
  - Properties of angles—types of angles, congruent

*Instructions:  Classify the figures below based on their angles and sides.*

1. 

    Answer: Parallelogram, rectangle

2. 

    Answer: Acute, equilateral triangle

**5.NF.1**

**Problem:**

$$\frac{3}{5} + \frac{7}{9} =$$

**Answer:**

$$\frac{27}{45} + \frac{35}{45} = \frac{62}{45}$$

Notes on Common Core 5.NF. 1:

Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

*For example,*

- $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. *(In general, a/b + c/d = (ad + bc)/bd.)*

*Instructions: Solve the following problems.*

1. $\frac{4}{5} - \frac{3}{8} =$

        Answer: $\frac{17}{40}$

2. $\frac{8}{10} + \frac{3}{20} =$

        Answer: $\frac{19}{20}$

3. $\frac{6}{8} + \frac{5}{4} =$

        Answer: $\frac{64}{32}$ or 2

**5.NF.3**

**Problem:**

The six fifth grade classrooms have a total of 27 boxes of markers. How many boxes will each classroom receive?

**Answer:**

$\frac{27}{6} = 4\frac{3}{6} = 4\frac{1}{2}$ boxes of markers

Notes on Common Core 5. NF. 3:
Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
*For example,*

- *interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$.*

*Instructions: Solve the following problems.*

1. Paul walked 11 miles in 4 hours. If he walked the same distance every hour, how far did he walk in one hour?

    Answer: $2\frac{3}{4}$ miles

2. There are 14 students at a pizza party. 4 pizzas, each containing 8 slices were ordered. How many slices of pizza will each student get, rounded to the nearest whole number?
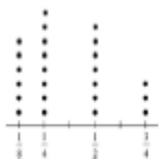
    Answer: $\frac{32}{14} = 2\frac{2}{7} = 2$ slices

3. Alecia ran 5 miles in 92 minutes. How long did it take her to run 1 mile?

    Answer: $\frac{92}{5} = 18\frac{2}{5}$ minutes

**5.MD.2**

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**Problem:** Big Max has a hamburger stand offering these different size burgers: $\frac{1}{8}$ lb. Slider, $\frac{1}{4}$ lb. Just-Right, $\frac{1}{2}$ lb. Man-size, $\frac{3}{4}$ lb. Max-ed Out.



Which type of burger used the largest total amount of meat? Which type used the least?

**Answer:** Max-ed Out, Sliders

**Notes on Common Core 5. MD. 2:**

Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.

- For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

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*Instructions: Create a line plot and use it to answer the following questions.*

1. Mrs. Walters has 30 students in her class. She took a class vote to decide on the afternoon activity. $\frac{1}{3}$ of the class voted for independent reading time, $\frac{1}{6}$ of the class voted for board games, $\frac{1}{5}$ of the class voted for outside time, and the rest voted for listening to music. How many students voted for each activity? Which activity received the most votes? Which received the least?

   Answer: 10 students voted for reading, 5 for board games, 6 for outside time, and 9 for listening to music. Reading time, board games.

# Extensions

*Online Resources*

**5.NBT.6**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/878/original/illustrative_mathematics_878.pdf?1372633010

**5.NBT.7**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/292/original/illustrative_mathematics_292.pdf?1380307680

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/001/293/original/illustrative_mathematics_1293.pdf?1372633013

**5.G.3**

http://illuminations.nctm.org/ActivityDetail.aspx?ID=70

**5.G.4**

**What is a Trapezoid?**
http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/001/505/original/illustrative_mathematics_1505.pdf?1372633001

**5.NF.1**

**Egyptian Fractions**
http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/839/original/illustrative_mathematics_839.pdf?1372633031

**Mixed Numbers with Unlike Denominators**
http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/847/original/illustrative_mathematics_847.pdf?1372633086

**Finding Common Denominators to add**
http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/848/original/illustrative_mathematics_848.pdf?1372633035

**Jog a Thon**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/855/original/illustrative_mathematics_855.pdf?1372633075

**Finding Common Denominators to Subtract**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/859/original/illustrative_mathematics_859.pdf?1372633039

**Making S'Mores**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/000/861/original/illustrative_mathematics_861.pdf?1372633082


**5.MD.2**


**Fractions on a Line Plot**

http://s3.amazonaws.com/illustrativemathematics/illustration_pdfs/000/001/563/original/illustrative_mathematics_1563.pdf?1379942953

## Assessment Resources:

### 5.NBT.3

- Decimals: What decimal number is illustrated? (Fifth grade - C.1)
- Decimals: Understanding decimals expressed in words (Fifth grade - C.2)
- Decimals: Place values in decimal numbers (Fifth grade - C.3)
  - Decimals: Equivalent decimals (Fifth grade - C.4)
  - Decimals: Decimal number lines (Fifth grade - C.6)
  - Decimals: Compare decimal numbers (Fifth grade - C.7)
  - Decimals: Put decimal numbers in order (Fifth grade - C.8)
  - Multiply decimals: Inequalities with decimal multiplication (Fifth grade - G.10)

### 5.NBT.6

- Multiplication: Properties of multiplication (Fifth grade - F.6)
- Division: Division facts to 12 (Fifth grade - H.1)
- Division: Division facts to 12: word problems (Fifth grade - H.2)
- Division: Divide multi-digit numbers by 1-digit numbers (Fifth grade - H.3)
- Division: Divide multi-digit numbers by 1-digit numbers: word problems (Fifth grade - H.4)
- Division: Divide numbers ending in zeroes (Fifth grade - H.8)
- Division: Divide numbers ending in zeroes: word problems (Fifth grade - H.9)
- Division: Divide by 2-digit numbers (Fifth grade - H.10)
- Division: Divide by 2-digit numbers: word problems (Fifth grade - H.11)
- Division: Choose numbers with a particular quotient (Fifth grade - H.14)

### 5.NBT.7

- Addition and subtraction: Add and subtract money: word problems (Fifth grade - D.4)
- Add and subtract decimals: Add and subtract decimal numbers (Fifth grade - E.1)
- Add and subtract decimals: Add and subtract decimals: word problems (Fifth grade - E.2)
- Add and subtract decimals: Choose decimals with a particular sum or difference (Fifth grade - E.3)
- Add and subtract decimals: Complete the addition or subtraction sentence (Fifth grade - E.4)
- Add and subtract decimals: Inequalities with decimal addition and subtraction (Fifth grade - E.5)
- Multiply decimals: Multiply a decimal by a one-digit whole number (Fifth grade - G.3)
- Multiply decimals: Multiply a decimal by a multi-digit whole number (Fifth grade - G.4)
- Multiply decimals: Multiply decimals and whole numbers: word problems (Fifth grade - G.5)

- Multiply decimals: Multiply money amounts: word problems (Fifth grade - G.6)
- Multiply decimals: Multiply three or more numbers, one of which is a decimal (Fifth grade - G.7)
- Multiply decimals: Multiply two decimals using grids (Fifth grade - G.8)
- Multiply decimals: Multiply two decimals (Fifth grade - G.9)
- Division: Divide money amounts: word problems (Fifth grade - H.12)
- Division with decimals: Division with decimal quotients (Fifth grade - I.3)
- Division with decimals: Division with decimal quotients and rounding (Fifth grade - I.4)
- Division with decimals: Division with decimal quotients: word problems (Fifth grade - I.5)
- Mixed operations: Add, subtract, multiply, and divide decimals (Fifth grade - P.3)
- Mixed operations: Add, subtract, multiply, and divide decimals: word problems (Fifth grade - P.4)
- Consumer math: Price lists (Fifth grade - U.1)
- Consumer math: Unit prices (Fifth grade - U.2)

**5.G.3**

- Geometry: Classify quadrilaterals (Fifth grade - B.7)

**5.G.4**

- Geometry: Identify planar and solid figures (Fifth grade - B.1)
- Geometry: Types of triangles (Fifth grade - B.2)
- Geometry: Open and closed shapes and qualities of polygons (Fifth grade - B.3)
- Geometry: Regular and irregular polygons (Fifth grade - B.4)
- Geometry: Number of sides in polygons (Fifth grade - B.5)
- Geometry: Which figure is being described? (Fifth grade - B.6)
- Geometry: Classify quadrilaterals (Fifth grade - B.7)

**5.NF.1**

- Fractions and mixed numbers: Equivalent fractions (Fifth grade - L.2)
- Fractions and mixed numbers: Reduce fractions to lowest terms (Fifth grade - L.3)
- Fractions and mixed numbers: Convert between improper fractions and mixed numbers (Fifth grade - L.4)
- Add and subtract fractions: Add fractions with unlike denominators (Fifth grade - M.4)
- Add and subtract fractions: Subtract fractions with unlike denominators (Fifth grade - M.5)
- Add and subtract fractions: Add 3 or more fractions with unlike denominators (Fifth grade - M.7)
- Add and subtract fractions: Complete addition and subtraction sentences with fractions (Fifth grade - M.9)
- Add and subtract fractions: Inequalities with addition and subtraction of fractions (Fifth grade - M.10)
- Add and subtract fractions: Add mixed numbers with unlike denominators (Fifth grade - M.12)
- Add and subtract fractions: Subtract mixed numbers with unlike denominators (Fifth grade - M.13)
- Add and subtract fractions: Complete addition and subtraction sentences with mixed numbers (Fifth grade - M.15)
- Add and subtract fractions: Inequalities with addition and subtraction of mixed numbers (Fifth grade - M.16)

**5.NF.3**

- Fractions and mixed numbers: Fractions review (Fifth grade - L.1)
- Divide fractions: Divide fractions by whole numbers (Fifth grade - O.1)


**5.MD.2**


- Data and graphs: Interpret line plots (Fifth grade - S.10)
- Data and graphs: Create line plots (Fifth grade - S.11)

**District Approved**
**Common Core Resources**

<u>General Resources</u>
**Where'd the Standards originate?**
http://www.youtube.com/watch?v=dnjbwJdcPjE&lr=1

**Common Core Tools**
http://commoncoretools.me/
http://www.ccsstoolbox.com/
http://www.achievethecore.org/steal-these-tools


**Manipulatives**
http://nlvm.usu.edu/en/nav/vlibrary.html
http://www.explorelearning.com/index.cfm?method=cResource.dspBrowseCorrelations&v=s&id=USA-000
http://www.thinkingblocks.com/


<u>Problem Solving Resources</u>

**Illustrative Math Project**
http://illustrativemathematics.org/standards/k8
http://illustrativemathematics.org/standards/hs
The site contains sets of tasks that illustrate the expectations of various CCSS in grades K–8 grade and high school. More tasks will be appearing over the coming weeks.  Eventually the sets of tasks will include elaborated teaching tasks with detailed information about using them for instructional purposes, rubrics, and student work.

**Inside Mathematics**
http://www.insidemathematics.org/index.php/tools-for-teachers
Inside Mathematics showcases multiple ways for educators to begin to transform their teaching practices. On this site, educators can find materials and tasks developed by grade level and content area.

**Mathematics Assessment Project (MAP)**
Shell Centre/Mathematics Assessment Resource Services (MARS), University of Nottingham & UC Berkley
MAP formative assessment are anchored in the content described in the standards, focusing on the mathematical practices that are the major new challenge in the CCSS. The two complementary types are concept-focused lessons and problem-focused lessons. These lessons are designed to assess and develop students' capacity to apply their mathematics flexibly to non-routine unstructured problems, both from the real world and within pure mathematics.

**Formative Assessment Lessons (High School)**
http://map.mathshell.org/materials/lessons.php
http://map.mathshell.org.uk/materials/tasks.php

**IXL**
http://www.ixl.com/

**Sample Balance Math Tasks**
http://www.nottingham.ac.uk/~ttzedweb/MARS/tasks/


**New York City Department of Education**
http://schools.nyc.gov/Academics/CommonCoreLibrary/SeeStudentWork/default.htm
NYC educators and national experts developed Common Core-aligned tasks embedded in units of study to support schools in implementation of the CCSSM.

**Gates Foundations Tasks**
http://www.gatesfoundation.org/college-ready-education/Documents/supporting-instruction-cards-math.pdf

**Minnesota STEM Teachers' Center**
http://www.scimathmn.org/stemtc/frameworks/721-proportional-relationships

**Singapore Math Tests K-12**
http://www.misskoh.com

**Math Score:**
Math practices and assessments online developed by MIT graduates.
http://www.mathscore.com/

**Massachusetts Comprehensive Assessment System**
www.doe.mass.edu/mcas/search

**Performance Assessment Links in Math (PALM)**
PALM is currently being developed as an on-line, standards-based, resource bank of mathematics performance assessment tasks indexed via the National Council of Teachers of Mathematics (NCTM).
http://palm.sri.com/

**Mathematics Vision Project**
http://www.mathematicsvisionproject.org/


**Assessment Resources**
- Illustrative Math: http://illustrativemathematics.org/
- PARCC: http://www.parcconline.org/samples/item-task-prototypes
- NJDOE: http://www.state.nj.us/education/modelcurriculum/math/ (username: model; password: curriculum)
- DANA: http://www.ccsstoolbox.com/parcc/PARCCPrototype_main.html
- New York: http://www.p12.nysed.gov/assessment/common-core-sample-questions/
- Delaware: http://www.doe.k12.de.us/assessment/CCSS-comparison-docs.shtml

| PARCC Prototyping Project | | |
|---|---|---|
| Elementary Tasks (ctrl+click) | Middle Level Tasks (ctrl+click) | High School Tasks (ctrl+click) |
| • **Flower gardens (grade 3)**<br>• **Fractions on the number line (grade 3)**<br>• **Mariana's fractions (grade 3)** | • **Cake weighing (grade 6)**<br>• **Gasoline consumption (grade 6)**<br>• **Inches and centimeters** | • **Cellular growth**<br>• **Golf balls in water**<br>• **Isabella's credit card**<br>• **Rabbit populations** |

| | | |
|---|---|---|
| • **School mural (grade 3)** <br> • **Buses, vans, and cars (grade 4)** <br> • **Deer in the park (grade 4)** <br> • **Numbers of stadium seats (grade 4)** <br> • **Ordering juice drinks (grade 4)** | **(grade 6)** <br> • **Anne's family trip (grade 7)** <br> • **School supplies (grade 7)** <br> • **Spicy veggies (grade 7)** <br> • **TV sales (grade 7)** | • **Transforming graphs of quadratic functions** |

**Professional Development Resources**
**Edmodo**
http://www.edmodo.com
Course: iibn34

**Clark County School District Wiki Teacher**
http://www.wiki-teacher.com/wikiDevelopment/unwrappedSearch.php#contentAreaId=6&courseId=474

**Learner Express Modules for Teaching and Learning**
http://www.learner.org/series/modules/express/videos/video_clips.html?type=1&subject=math

**Additional Videos**
http://www.achieve.org/achieving-common-core; http://www.youtube.com/user/TheHuntInstitute/videos

**Mathematical Practices**
**Inside Mathematics**
http://www.insidemathematics.org/index.php/commmon-core-math-intro
Also see the ***Tools for Educators***

**Mathematics Assessment Project**
http://map.mathshell.org/materials/stds.php?id=1158

**The Teaching Channel**
https://www.teachingchannel.org

**Learnzillion**
https://www.learnzillion.com

**Engage NY**
http://www.engageny.org/video-library?f[0]=im_field_subject%3A19