Directions:

Daily Directions

Read directions for the topic and follow the examples.

Students should complete approximately 1-2 sections per day

Contact Information:

Teacher Contact Information

School Contact Information
4.6 Equations with Division Problems (DOK 2)

Solve missing numbers in equations using fact families. To find the dividend, multiply the divisor and the quotient.

___ + 18 = 7
7 \times 18 = 126
Answer: 126 \div 18 = 7

If you are given the larger number, the dividend, then simply divide the dividend by the other given number to find the missing number.

125 \div ____ = 25
125 \div 25 = 5
Answer: 125 \div 5 = 25

Fill in the blanks. (DOK 2)

1. 105 \div ____ = 3
11. ____ \div 7 = 82

2. ____ \div 4 = 25
12. 48 \div 4 = ____

3. 288 \div 6 = ____
13. 88 \div ____ = 8

4. ____ \div 5 = 33
14. ____ - 94 = 5

5. 98 \div 7 = ____
15. 285 \div 3 = ____

6. 192 \div ____ = 8
16. 136 \div ____ = 2

7. ____ \div 2 = 63
17. ____ \div 39 = 6

8. 156 \div ____ = 15
18. 600 \div 8 = ____

9. 108 \div 9 = ____
19. 414 \div ____ = 9

10. 390 \div ____ = 6
20. ____ \div 7 = 33
Chapter 5
Fractions

5.1 Fractions (DOK 1, 2)

Fractions are numbers that represent how many parts of a whole there are. An example of a fraction is $\frac{3}{7}$. The top part of the fraction is called the numerator, which is the number of parts of the whole. In this case, 3 parts of 7. The bottom part of a fraction is called the denominator, which is the total number of parts in the whole. In this case, 7.

$$\frac{3}{7} \longleftrightarrow \text{Numerator} \rightarrow \frac{1}{6} \longleftrightarrow \text{Denominator}$$

(An easy way to remember this is both denominator and down start with a “d”.)

When you read a fraction, read the top number first, as it is, and then read the bottom number, adding a “ths” to the end of numbers greater than 3.

If the denominator is 1 $\frac{7}{1}$, it is read seven ones.

If the denominator is 2 $\frac{7}{2}$, it is read seven-halves. $\frac{1}{2}$ is read one-half.

If the denominator is 3 $\frac{4}{3}$, it is read four-thirds. $\frac{1}{3}$ is read one-third.

Writing out the numbers with words is the same. $\frac{3}{8}$ is read as “three-eighths”. $\frac{1}{6}$ is read as “one-sixth.”

Example: A pizza is cut into 8 equal slices, and you and your friends have eaten 3 of the pieces altogether. How much of the pizza has been eaten?

Step 1: Write a fraction.

$$\frac{\text{how many slices were eaten}}{\text{total number of slices}} = \frac{3}{8}$$

Solution: $\frac{3}{8}$: You and your friends ate three-eighths of the pizza.
Write the fractions in word form. (DOK 1)

1. \( \frac{1}{8} \)  
2. \( \frac{5}{6} \)  
3. \( \frac{2}{3} \)  
4. \( \frac{7}{12} \)  
5. \( \frac{67}{100} \)  
6. \( \frac{3}{4} \)  
7. \( \frac{1}{5} \)  
8. \( \frac{7}{100} \)  
9. \( \frac{2}{12} \)  
10. \( \frac{1}{2} \)  
11. \( \frac{3}{8} \)  
12. \( \frac{5}{10} \)  

Write the fractions in standard form. (DOK 1)

13. three-twelfths  
14. one-eighth  
15. seven-hundredths  
16. two-fifths  
17. eight-tenths  
18. one-third  
19. four-sixths  
20. one-fourth  

Write the fraction in each word problem in standard form. (DOK 2)

21. There are eight hamsters for sale at the Happy Pet Store. Three of the hamsters are solid tan, and five are tan and white. What fraction of the hamsters are solid tan?

22. Danny and his brother, Dave, have 100 pennies altogether. Danny owns 77 of the pennies. What fraction of the pennies belong to Danny?

23. Elizabeth has 8 dolls in her collection. Two of the dolls have pink dresses. What fraction of the dolls have pink dresses?

24. Marcus opened an egg carton and found 5 brown eggs and 7 white eggs. What fraction of the eggs are brown?

25. Paulo threw a basketball 100 times and made 42 baskets. For what fraction of the basketball throws did he make the basket?
5.2 Modeling Fractions DOK 2)

When writing a fraction of a model that is shaded, follow this instruction:

\[
\frac{\text{Number of pieces that are shaded}}{\text{Total number of pieces in the model}}
\]

**Example:** Write the fraction of the model that is shaded.

\[
\text{Step 1: Count the number of pieces that are shaded. There are 5.}
\]

\[
\text{Step 2: Count the total number of pieces. There are 8.}
\]

\[
\text{Step 3: Write the fraction according to the instruction above.}
\]

\[
\frac{\text{Number of pieces that are shaded}}{\text{Total number of pieces in the model}} = \frac{5}{8}
\]

**Answer:** The fraction of the model that is shaded is \(\frac{5}{8}\).

Note that each part of the model is equal to \(\frac{1}{8}\). This is known as the **unit fraction** of this model. The fraction \(\frac{5}{8}\) is built from 5 units of the model.

Write the fraction of the shaded pieces of each model. (DOK 2)

1.

2.

3.

4.

5.

6.

7.
Write the fraction of the eggs remaining in each of the egg cartons below. The eggs are the white circles. (DOK 2)

8. 
9. 

Write the fraction modeled by the fraction strips below. (DOK 2)

12. 
13. 

14. 

Write the fraction of the shaded portion of the shapes below. (DOK 2)

18. 
19. 

20. 
21.
5.3 Comparing Fractions (DOK 2)

Comparing fractions with like denominators is almost like comparing whole numbers.

Example: Compare \( \frac{2}{6} \) and \( \frac{3}{6} \).

When the denominators are the same, you only need to compare the numerators. There are 2 ways to do this.

Method 1: Using Pictures:

\( \frac{2}{6} = \) \( \frac{3}{6} = \)

Each circle is divided into 6 parts, the same as the denominator. Which circle has more shaded parts?

From the pictures, you can see that the \( \frac{3}{6} \) circle has more shaded parts

Solution: \( \frac{2}{6} < \frac{3}{6} \)

Method 2: Using Numbers:
Since the denominator of the fractions are the same, we will only look at the numerators. \( 2 < 3 \). So, \( \frac{2}{6} \) is smaller than \( \frac{3}{6} \).

Solution: \( \frac{2}{6} < \frac{3}{6} \)

Fill in the boxes below with either < or >. (DOK 2)

1. \( \frac{2}{5} \square \frac{4}{5} \)

3. \( \frac{3}{8} \square \frac{2}{8} \)

5. \( \frac{91}{100} \square \frac{89}{100} \)

7. \( \frac{7}{10} \square \frac{6}{10} \)

2. \( \frac{7}{12} \square \frac{5}{12} \)

4. \( \frac{1}{6} \square \frac{5}{6} \)

6. \( \frac{2}{3} \square \frac{1}{3} \)

8. \( \frac{17}{100} \square \frac{71}{100} \)

Use the shaded portion of each shape to fill in the boxes below with either < or >. (DOK 2)

9.

10.
Matching: Write the letter of the number lines in Column B that show the same fractions as the models in Column A. (DOK 2)

11. [Diagram of a hexagon divided into equal parts]
   Column A

12. [Diagram of a triangle divided into equal parts]
   Column A

13. [Diagram of an octagon divided into equal parts]
   Column A

14. [Diagram of a quadrilateral divided into equal parts]
   Column A

Column B

A) [Number line: 0 to 1 with fractions 0, 1/4, 1/3, 1/2, 2/3, 3/4]

B) [Number line: 0 to 1 with fractions 0, 1/4, 1/3, 1/2, 2/3, 3/4]

C) [Number line: 0 to 1 with fractions 0, 1/4, 1/3, 1/2, 2/3, 3/4]

D) [Number line: 0 to 1 with fractions 0, 1/4, 1/3, 1/2, 2/3, 3/4]

Use the number lines A, B, C, and D above to find if these comparison sentences are true or false. Circle the correct answer. (DOK 2)

15. The value of the point on number line C is greater than the value of the point on number line B.
   True   False

16. The value of the point on number line D is less than the value of the point on number line A.
   True   False

17. The value of the point on number line B is less than the value of the point on number line A.
   True   False
5.6 Finding Numerators (DOK 2, 3)

Remember: Any fraction that has the same non-zero numerator and denominator equals 1.

Examples: \(\frac{5}{5} = 1\) \(\frac{8}{8} = 1\) \(\frac{12}{12} = 1\) \(\frac{345}{345} = 1\) \(\frac{107}{107} = 1\)

Any fraction multiplied by 1 in any fraction form remains equal. Multiply across: first multiply the numerators and then multiply the denominators.

Examples: \(\frac{3 \times 4}{7 \times 4} = \frac{12}{28}\) so \(\frac{3}{7} = \frac{12}{28}\) \(\frac{2 \times 5}{3 \times 5} = \frac{10}{15}\) so \(\frac{2}{3} = \frac{10}{15}\)

Problem: Find the missing numerator. \(\frac{5}{8} = \frac{24}{x}\)

Step 1: Ask yourself, “What was 8 multiplied by to get 24”? 3 is the answer. \(8 \times 3 = 24\)

Step 2: The only way to keep the fraction equal is to multiply the numerator and denominator by the same number. The denominator was multiplied by 3, so multiply the numerator by 3.

\(\frac{5 \times 3}{8 \times 3} = \frac{15}{24}\)

Find the missing numerators from the following equivalent fractions. (DOK 2)

1. \(\frac{1}{3} = \frac{2}{6}\)  
2. \(\frac{3}{4} = \frac{12}{10}\)  
3. \(\frac{2}{5} = \frac{10}{8}\)  
4. \(\frac{9}{10} = \frac{10}{12}\)  
5. \(\frac{1}{2} = \frac{6}{6}\)  
6. \(\frac{2}{3} = \frac{12}{12}\)  
7. \(\frac{4}{5} = \frac{100}{100}\)  
8. \(\frac{1}{4} = \frac{8}{8}\)  
9. \(\frac{5}{6} = \frac{12}{12}\)  
10. \(\frac{1}{4} = \frac{100}{100}\)  
11. \(\frac{2}{6} = \frac{12}{12}\)  
12. \(\frac{3}{10} = \frac{100}{100}\)  
13. \(\frac{1}{5} = \frac{8}{8}\)  
14. \(\frac{2}{4} = \frac{12}{12}\)  
15. \(\frac{1}{3} = \frac{6}{6}\)  
16. \(\frac{3}{4} = \frac{8}{8}\)  
17. \(\frac{3}{5} = \frac{10}{10}\)  
18. \(\frac{1}{2} = \frac{8}{8}\)  
19. \(\frac{4}{5} = \frac{10}{10}\)  
20. \(\frac{5}{6} = \frac{12}{12}\)
Read each problem below and solve. (DOK 2, 3)

21. The Hardy cousins ate the apples without worms.

What fraction of the apples did the Hardy cousins eat? ___________

22. The fruit stand that sold the apples to the Hardy Cousins, also sold Misty Brown 4 apples. One has a worm. What fraction of apples sold to Misty Brown has a worm?

23. Abigail wants to shade $\frac{4}{5}$ of the grid below. There are 100 squares on the grid.

How many squares on the grid should Abigail shade? ___________

24. Which of the pairs of fractions below are equivalent to $\frac{2}{3}$?

A) $\frac{1}{2}$ and $\frac{4}{6}$  B) $\frac{3}{5}$ and $\frac{6}{8}$  C) $\frac{4}{6}$ and $\frac{8}{12}$  D) $\frac{4}{6}$ and $\frac{30}{100}$

25. Which of the pairs of fractions below are equivalent to $\frac{1}{4}$?

A) $\frac{1}{8}$ and $\frac{4}{8}$  B) $\frac{2}{8}$ and $\frac{3}{12}$  C) $\frac{2}{6}$ and $\frac{3}{12}$  D) $\frac{2}{3}$ and $\frac{24}{100}$

26. Circle the statement about the fraction models below that is true.

A) - Each shows the same fraction because they both have 2 sections shaded.

B) - Each shows a different fraction because they both have 2 shaded sections but a different number of total sections.
6.1 Adding Fractions (DOK 2)

When adding fractions that have the same denominator, the denominator stays the same in the answer. You simply add the numerators and simplify the sum if necessary.

Example 1: \[ \frac{4}{5} + \frac{2}{5} \]

Step 1: \[ \frac{4}{5} + \frac{2}{5} = \frac{6}{5} \] Since the denominators are the same, we can add.

Answer: \[ \frac{6}{5} \] or since \[ \frac{6}{5} = \frac{5}{5} + \frac{1}{5} \], \[ \frac{6}{5} = \frac{1}{5} \]

Add

1. \[ \frac{1}{10} + \frac{3}{10} \]
2. \[ \frac{2}{5} + \frac{1}{5} \]
3. \[ \frac{3}{8} + \frac{1}{8} \]
4. \[ \frac{1}{5} + \frac{3}{5} \]
5. \[ \frac{4}{9} + \frac{2}{9} \]
6. \[ \frac{3}{10} + \frac{4}{10} \]
7. \[ \frac{1}{4} + \frac{2}{4} \]
8. \[ \frac{7}{12} + \frac{2}{12} \]
9. \[ \frac{3}{8} + \frac{2}{8} \]
10. \[ \frac{3}{10} + \frac{2}{10} \]
Example 2: \[
\frac{3}{10} + \frac{25}{100}
\]

Step 1: Both fractions must have the same denominator.

Change \[\frac{3}{10} = \frac{30}{100}\] the denominator changed from 10 to 100 by multiplying by 10. So, multiply \(3 \times 10 = 30\)

\[\frac{3}{10} = \frac{30}{100}\] Now we can add.

Step 2:
\[
\frac{30}{100} + \frac{25}{100} = \frac{55}{100}
\]

Add

1. \[
\frac{1}{10} + \frac{1}{100}
\]

6. \[
\frac{3}{10} + \frac{25}{100}
\]

2. \[
\frac{2}{100} + \frac{2}{10}
\]

7. \[
\frac{1}{10} + \frac{10}{100}
\]

3. \[
\frac{10}{10} + \frac{10}{100}
\]

8. \[
\frac{9}{10} + \frac{15}{100}
\]

4. \[
\frac{7}{10} + \frac{70}{100}
\]

9. \[
\frac{4}{10} + \frac{4}{100}
\]

5. \[
\frac{5}{10} + \frac{50}{100}
\]

10. \[
\frac{30}{100} + \frac{3}{10}
\]
6.2 Adding Mixed Numbers

Mixed numbers are a whole number with a fraction, \(1\frac{1}{2}, 3\frac{2}{3}, 10\frac{1}{10}\), and \(100\frac{3}{8}\) are mixed numbers.

When you add mixed numbers, add the fraction part and the whole numbers separately.

Example 1: \(8\frac{1}{4} + 6\frac{1}{4} = 8 + 6 + \frac{1}{4} + \frac{1}{4} = 14\frac{2}{4}\)

Example 2: The mixed number can be added in columns.

\[
\begin{align*}
&\quad 1\frac{1}{8} \\
+ &\quad 2\frac{3}{8} \\
\hline
&\quad 3\frac{4}{8}
\end{align*}
\]

Example 3: \(1\frac{3}{10} + 3\frac{3}{100}\) The denominators must be the same so change \(1\frac{3}{10}\) to \(1\frac{30}{100}\).

\[
1\frac{30}{100} + 3\frac{3}{100} = 4\frac{33}{100}.
\]

Add

1. \(2\frac{4}{10} + 5\frac{1}{10}\)
2. \(5\frac{9}{10} + 6\frac{6}{100}\)
3. \(5\frac{3}{10} + 10\frac{3}{10}\)
4. \(3\frac{3}{10} + 4\frac{4}{100}\)
5. \(8\frac{1}{100} + 2\frac{2}{10}\)
6. \(9\frac{2}{100} + 3\frac{6}{10}\)
7. \(4\frac{1}{10}\) + \(3\frac{7}{10}\)
8. \(9\frac{1}{8}\)
9. \(6\frac{3}{8}\)
10. \(6\frac{3}{5}\)
11. \(3\frac{1}{4}\) + \(8\frac{1}{4}\)
12. \(7\frac{1}{10}\) + \(6\frac{15}{100}\)
6.5 Subtracting Fractions (DOK 2)

When subtracting fractions that have the same denominator, the denominator stays the same in the answer. Subtract the numerators and simplify the resulting difference if necessary.

Example: Subtract $9\frac{7}{8} - 2\frac{1}{8}$

**Step 1:** Rewrite the problem vertically, and subtract.

\[
\begin{align*}
9\frac{7}{8} \\
-2\frac{1}{8} \\
\hline \\
7\frac{6}{8}
\end{align*}
\]

**Step 2:** Subtract the fractions, $\frac{7}{8} - \frac{1}{8} = \frac{6}{8}$. And subtract the whole numbers, $9 - 2 = 7$.

\[
\begin{align*}
9\frac{7}{8} \\
-2\frac{1}{8} \\
\hline \\
7\frac{6}{8}
\end{align*}
\]

Subtract. (DOK 2)

\[
\begin{array}{cccccccc}
1. & 4\frac{8}{10} & 3. & \frac{7}{8} & 5. & 14\frac{9}{10} & 7. & \frac{5}{5} & 9. & \frac{11}{12} & 11. & \frac{8}{12} \\
& -1\frac{3}{10} & & -\frac{4}{8} & & -8\frac{1}{10} & & -\frac{2}{5} & & -10\frac{3}{12} & & -\frac{1}{12} \\
& & & & & & & & & & & \\
2. & \frac{6}{100} & 4. & \frac{13}{4} & 6. & \frac{3}{6} & 8. & \frac{5}{8} & 10. & \frac{114}{5} & 12. & \frac{53}{8} \\
& -\frac{2}{100} & & -7\frac{2}{4} & & -\frac{1}{6} & & -\frac{1}{8} & & -71\frac{3}{5} & & -47\frac{3}{8}
\end{array}
\]