Circle the Difference:

What Happened in the Equation?

$$\frac{8 \times 4}{1 \times 4} \div \frac{1}{4} = ?$$

$$\frac{32}{1 \times 4} \div \frac{1}{4} = ?$$

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Hello Teachers,

Thank you for downloading this handout. After decades of teaching, now I am sharing some of the activities I designed for my students and some new ones as well.

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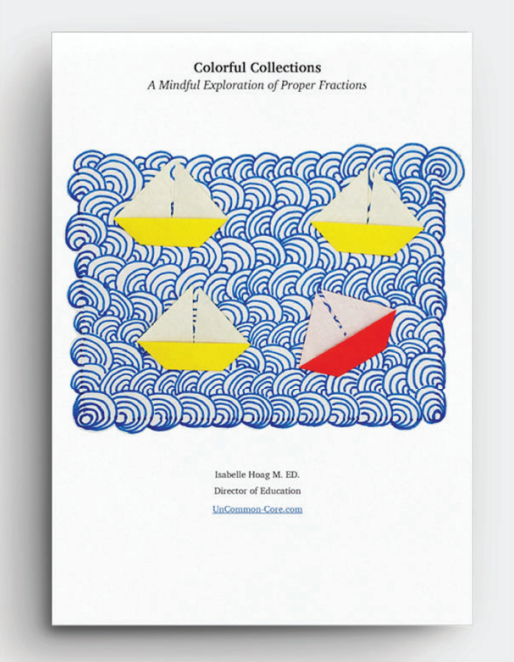

While you are there, sign up for your free copy of **Colorful Collections:** *A Mindful Exploration of Proper Fractions.*

Also, visit my Teachers Pay Teachers store UnCommon-Core dot com.

Thank you again. All the best,

Isabelle

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Circle the Difference

This activity is a unique way to help your students make sense of dividing by fractions.

All they have to do is compare an equation with the one above, circle the difference, and then explain what happened between the steps.

Students get
- An up close view of solving division problems with fractions
- A low risk format in which to make sense of dividing by fractions
- A chance to write about math and
- Connect number properties with their role in solving equations.

The last worksheet is blank so you or your students can create more **Circle the Difference** games.

Enjoy!

Isabelle

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Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $2 \div \frac{1}{3} = ?$

2. $\frac{2}{1} \div \frac{1}{3} = ?$

3. $\frac{2 \times 3}{1 \times 3} \div \frac{1}{3} = ?$

4. $\frac{6}{1 \times 3} \div \frac{1}{3} = ?$

5. $\frac{6}{3} \div \frac{1}{3} = ?$

6. $\frac{6 \div 1}{3 \div 3} = ?$

7. $\frac{6}{3 \div 3} = ?$

8. $\frac{6}{1} = ?$

9. $\frac{6}{1} = 6$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $5 \div \frac{1}{2} = ?$

2. $\frac{5}{1} \div \frac{1}{2} = ?$

3. $\frac{5 \times 2}{1 \times 2} \div \frac{1}{2} = ?$

4. $\frac{10}{1 \times 2} \div \frac{1}{2} = ?$

5. $\frac{10}{2} \div \frac{1}{2} = ?$

6. $\frac{10 \div 1}{2 \div 2} = ?$

7. $\frac{10}{2 \div 2} = ?$

8. $\frac{10}{1} = ?$

9. $\frac{10}{1} = 10$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $8 \div \frac{1}{4} = ?$

2. $\frac{8}{1} \div \frac{1}{4} = ?$

3. $\frac{8 \times 4}{1 \times 4} \div \frac{1}{4} = ?$

4. $\frac{32}{1 \times 4} \div \frac{1}{4} = ?$

5. $\frac{32}{4} \div \frac{1}{4} = ?$

6. $\frac{32 \div 1}{4 \div 4} = ?$

7. $\frac{32}{4 \div 4} = ?$

8. $\frac{32}{1} = ?$

9. $\frac{32}{1} = 32$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $1 \div \frac{1}{5} = ?$

2. $\frac{1}{1} \div \frac{1}{5} = ?$

3. $\frac{1 \times 5}{1 \times 5} \div \frac{1}{5} = ?$

4. $\frac{1 \times 5}{5} \div \frac{1}{5} = ?$

5. $\frac{5}{5} \div \frac{1}{5} = ?$

6. $\frac{5 \div 1}{5 \div 5} = ?$

7. $\frac{5}{5 \div 5} = ?$

8. $\frac{5}{1} = ?$

9. $\frac{5}{1} = 5$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $0 \div \frac{1}{9} = ?$

2. $\frac{0}{1} \div \frac{1}{9} = ?$

3. $\frac{0 \times 9}{1 \times 9} \div \frac{1}{9} = ?$

4. $\frac{0 \times 9}{9} \div \frac{1}{9} = ?$

5. $\frac{0}{9} \div \frac{1}{9} = ?$

6. $\frac{0 \div 1}{9 \div 9} = ?$

7. $\frac{0 \div 1}{1} = ?$

8. $\frac{0}{1} = ?$

9. $\frac{0}{1} = 0$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1 $3 \div \frac{1}{6} = ?$

2 $\frac{3}{1} \div \frac{1}{6} = ?$

3 $\frac{3 \times 6}{1 \times 6} \div \frac{1}{6} = ?$

4 $\frac{3 \times 6}{6} \div \frac{1}{6} = ?$

5 $\frac{18}{6} \div \frac{1}{6} = ?$

6 $\frac{18 \div 1}{6 \div 6} = ?$

7 $\frac{18 \div 1}{1} = ?$

8 $\frac{18}{1} = ?$

9 $\frac{18}{1} = 18$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $4 \div \frac{1}{10} = ?$

2. $\frac{4}{1} \div \frac{1}{10} = ?$

3. $\frac{4 \times 10}{1 \times 10} \div \frac{1}{10} = ?$

4. $\frac{4 \times 10}{10} \div \frac{1}{10} = ?$

5. $\frac{40}{10} \div \frac{1}{10} = ?$

6. $\frac{40 \div 1}{10 \div 10} = ?$

7. $\frac{40 \div 1}{1} = ?$

8. $\frac{40}{1} = ?$

9. $\frac{40}{1} = 40$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1. $6 \div \frac{1}{3} = ?$

2. $\frac{6}{1} \div \frac{1}{3} = ?$

3. $\frac{6 \times 3}{1 \times 3} \div \frac{1}{3} = ?$

4. $\frac{6 \times 3}{3} \div \frac{1}{3} = ?$

5. $\frac{18}{3} \div \frac{1}{3} = ?$

6. $\frac{18 \div 1}{3 \div 3} = ?$

7. $\frac{18 \div 1}{1} = ?$

8. $\frac{18}{1} = ?$

9. $\frac{18}{1} = 18$

Circle the Difference

name:

State the question. Circle the change in the next equation. Explain what happened.

1 

2 

3 

4 

5 

6 

7 

8 

9 

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$2 \div \frac{1}{3} = ?$	Answers may vary: How many thirds are in two? How often can 1/3 be subtracted from two? How many times will 1/3 fit inside two?
2	$\frac{2}{1} \div \frac{1}{3} = ?$	Two was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{2 \times 3}{1 \times 3} \div \frac{1}{3} = ?$	We need an equivalent of two with a denominator of three. We need a denominator which is a multiple of three in order to divide. Three-thirds equals one. Multiplying by one does not change a number.
4	$\frac{6}{1 \times 3} \div \frac{1}{3} = ?$	2x3=6. The numerator of the fraction equivalent to two is six.
5	$\frac{6}{3} \div \frac{1}{3} = ?$	1x3=3. The denominator of the fraction equivalent to two is three. We can divide now.
6	$\frac{6 \div 1}{3 \div 3} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{6}{3 \div 3} = ?$	6÷1=6. Any number divided by one is still itself. The numerator is six.
8	$\frac{6}{1} = ?$	3÷3=1. Any number divided by itself is one. The denominator is one.
9	$\frac{6}{1} = 6$	Answers should match the question. There are 6 thirds in 2. One-third can be subtracted from two 6 times. One-third fits inside two 6 times.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$5 \div \frac{1}{2} = ?$	Answers may vary: How many halves are in five?
2	$\frac{5}{1} \div \frac{1}{2} = ?$	Five was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{5 \times 2}{1 \times 2} \div \frac{1}{2} = ?$	We need a fraction equivalent to five with a denominator which is a multiple of two. Two-halves equal one. Multiplying by one does not change a number.
4	$\frac{10}{1 \times 2} \div \frac{1}{2} = ?$	5x2=10. The numerator of the fraction equivalent to five is ten.
5	$\frac{10}{2} \div \frac{1}{2} = ?$	1x2=2. The denominator of the fraction equivalent to five is two.
6	$\frac{10 \div 1}{2 \div 1} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{10}{2 \div 2} = ?$	10÷1=10. Any number divided by one is still itself.
8	$\frac{10}{1} = ?$	2÷2=1. Any number divided by itself is one.
9	$\frac{10}{1} = 10$	Answers should match the question. There are 10 halves in five.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$8 \div \frac{1}{4} = ?$	Answers will vary: How many fourths are in eight?
2	$\frac{8}{1} \div \frac{1}{4} = ?$	8 was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{8 \times 4}{1 \times 4} \div \frac{1}{4} = ?$	We need an equivalent of 8 with a denominator of 4. Four-fourths equals one. Multiplying by one does not change a number.
4	$\frac{32}{1 \times 4} \div \frac{1}{4} = ?$	8x4=32
5	$\frac{32}{4} \div \frac{1}{4} = ?$	1x4=4
6	$\frac{32 \div 1}{4 \div 4} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{32}{4 \div 4} = ?$	32÷1=32. Any number divided by one is still itself.
8	$\frac{32}{1} = ?$	4÷4=1. Any number divided by itself is one.
9	$\frac{32}{1} = 32$	Answers should match the question. There are 32 fourths in 8.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$1 \div \frac{1}{5} = ?$	Answers may vary: How many fifths are in one?
2	$\frac{1}{1} \div \frac{1}{5} = ?$	1 was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{1 \times 5}{1 \times 5} \div \frac{1}{5} = ?$	We need an equivalent of 1 with a denominator of 5. Five-fifths equals one. Multiplying by one does not change a number.
4	$\frac{1 \times 5}{5} \div \frac{1}{5} = ?$	1x5=5
5	$\frac{5}{5} \div \frac{1}{5} = ?$	1x5=5
6	$\frac{5 \div 1}{5 \div 5} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{5}{5 \div 5} = ?$	5÷1=5. Any number divided by one is still itself.
8	$\frac{5}{1} = ?$	5÷5=1. Any number divided by itself is one.
9	$\frac{5}{1} = 5$	Answers should match the question. There are 5 fifths in five.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$0 \div \frac{1}{9} = ?$	Answers may vary: How many ninths are in zero?
2	$\frac{0}{1} \div \frac{1}{9} = ?$	Zero was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{0 \times 9}{1 \times 9} \div \frac{1}{9} = ?$	We need an equivalent of 0 with a denominator of 9 Nine-ninths equals one. Multiplying by one does not change a number.
4	$\frac{0 \times 9}{9} \div \frac{1}{9} = ?$	1x9=9
5	$\frac{0}{9} \div \frac{1}{9} = ?$	0x9=0
6	$\frac{0 \div 1}{9 \div 9} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{0 \div 1}{1} = ?$	9÷9=1. Any number divided by itself is one.
8	$\frac{0}{1} = ?$	0÷1=0. Any number divided by one is still itself.
9	$\frac{0}{1} = 0$	Answers should match the question. There are not any ninths in zero.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$3 \div \frac{1}{6} = ?$	Answers may vary: How many sixths in three?
2	$\frac{3}{1} \div \frac{1}{6} = ?$	3 was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{3 \times 6}{1 \times 6} \div \frac{1}{6} = ?$	We need an equivalent of 3 with a denominator of 6. Six-sixths equals one. Multiplying by one does not change a number.
4	$\frac{3 \times 6}{6} \div \frac{1}{6} = ?$	1x6=6.
5	$\frac{18}{6} \div \frac{1}{6} = ?$	3x6=18.
6	$\frac{18 \div 1}{6 \div 6} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{18 \div 1}{1} = ?$	6÷6=1. Any number divided by itself is one.
8	$\frac{18}{1} = ?$	18÷1=18. Any number divided by one is still itself.
9	$\frac{18}{1} = 18$	Answers should match the question. There are 18 sixths in 3.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$4 \div \frac{1}{10} = ?$	Answers may vary: How many tenths are in four?
2	$\frac{4}{1} \div \frac{1}{10} = ?$	4 was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{4 \times 10}{1 \times 10} \div \frac{1}{10} = ?$	We need an equivalent of 4 with a denominator of 10. 10/10 equals one. Multiplying by one does not change a number.
4	$\frac{4 \times 10}{10} \div \frac{1}{10} = ?$	1x10=10
5	$\frac{40}{10} \div \frac{1}{10} = ?$	4x10=40
6	$\frac{40 \div 1}{10 \div 10} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{40 \div 1}{1} = ?$	10÷10=1. Any number divided by itself is one.
8	$\frac{40}{1} = ?$	40÷1=40. Any number divided by one is still itself.
9	$\frac{40}{1} = 40$	Answers should match the question. There are 40 tenths in 4.

Spot the Difference

name:

State the question. Highlight the change in the next equation. Explain what happened.

1	$6 \div \frac{1}{3} = ?$	Answers may vary: How many thirds are in six?
2	$\frac{6}{1} \div \frac{1}{3} = ?$	6 was rewritten as a fraction with a denominator of one. Whole numbers have a denominator of one because it takes one hop to move to the next whole number.
3	$\frac{6 \times 3}{1 \times 3} \div \frac{1}{3} = ?$	We need an equivalent of 6 with a denominator of three. Three-thirds equals one. Multiplying by one does not change a number.
4	$\frac{6 \times 3}{3} \div \frac{1}{3} = ?$	1x3=3.
5	$\frac{18}{3} \div \frac{1}{3} = ?$	6x3=18.
6	$\frac{18 \div 1}{3 \div 3} = ?$	The division sign is written above and below the fraction bar to make it clear that we plan to divide numerators and then divide denominators.
7	$\frac{18 \div 1}{1} = ?$	3÷3=1. Any number divided by itself is one.
8	$\frac{18}{1} = ?$	18÷1=18 Any number divided by one is still itself.
9	$\frac{18}{1} = 18$	Answers should match the question. There are 18 thirds in 6.

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