MULTIPLES

1: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

2: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22,

3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33

4: 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44

5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55

6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66

7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77

8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88

9: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99

10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110

11: 11, 22, 33, 44, 55, 66, 77, 88, 99, 111, 121

12: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120

© Teach to Love Learning

MULTIPLY by ten

HOW FAR ARE YOU FROM THE DECIMAL PLACE?

47.63 x 100. = 4,763

47.63 x 10. = 476.3

47.63 x 1. = 47.63

47.63 x .10 = 4.763

47.63 x .01= .4763

047.63 x .001= .04763

10^2 10 x 10 =100

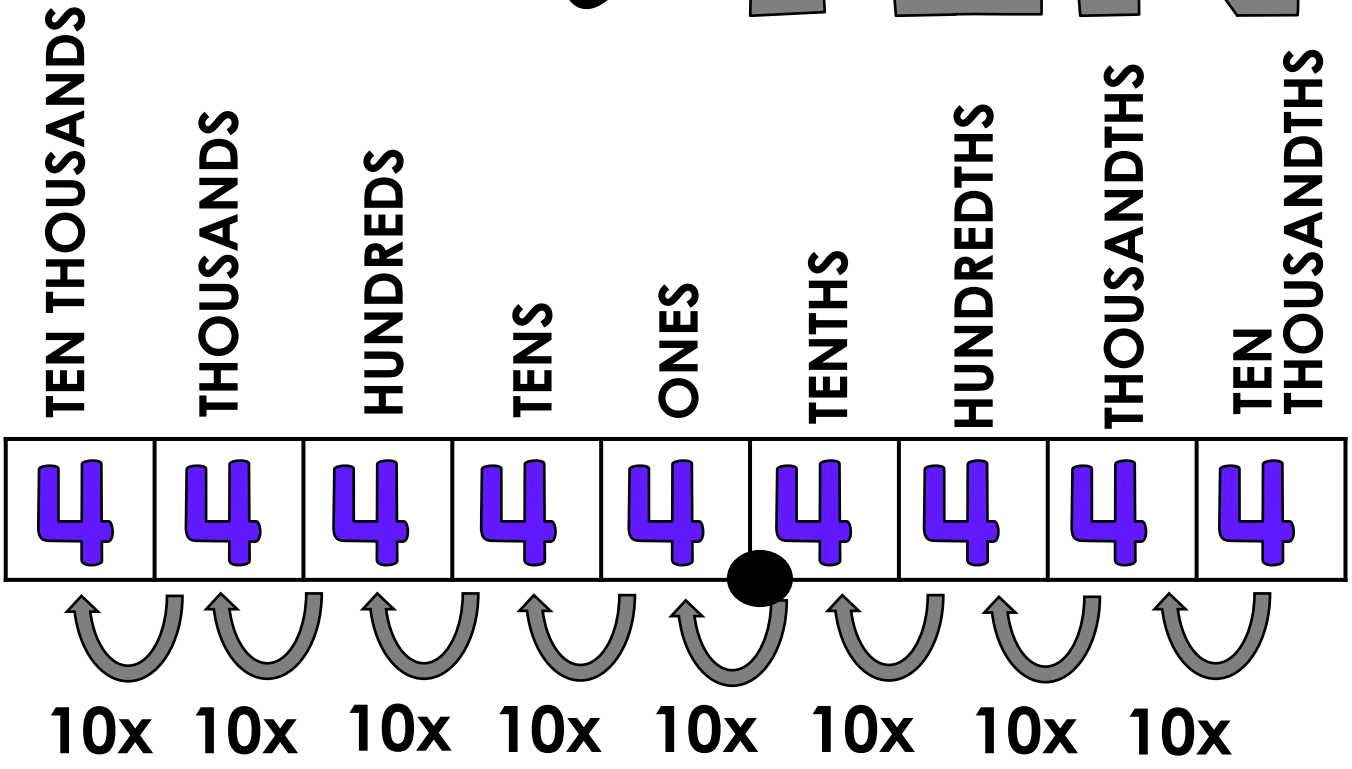
10^3 10 x 10 x 10 =1,000

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

$.01 = \frac{1}{100}$

© Teach to Love Learning

POWERS of TEN



MOVE TO THE LEFT- TEN TIMES MORE

MOVE TO THE RIGHT- TEN TIMES LESS

© Teach to Love Learning

ROUNDING

FIND THE NUMBER, LOOK NEXT DOOR
5 OR HIGHER, ADD ONE MORE
4 OR LESS, LET IT REST

NEAREST TEN

25	23	12	136
20 30			
30	20	10	140

NEAREST HUNDRED

125	223	356	136
100 200			
100	200	400	100

NEAREST THOUSAND

1256	2263	3516	1326
1000 2000			
1000	2000	4000	1000

© Teach to Love Learning

ROUNDING

decimals

FIND THE NUMBER, LOOK NEXT DOOR
5 OR HIGHER, ADD ONE MORE
4 OR LESS, LET IT REST

NEAREST TENTH

32.<u>3</u>4 ⟶ 32.<u>30</u>

NEAREST HUNDREDTH

25.3<u>4</u>7 ⟶ 25.3<u>50</u>

NEAREST THOUSANDTH

25.34<u>7</u>8 ⟶ 25.34<u>80</u>

© Teach to Love Learning

ADDING *decimals*

1. LINE UP THE DECIMALS
2. FILL IN ZEROES TO MAKE IT LOOK SQUARE
3. DROP DOWN THE DECIMAL
4. ADD FROM RIGHT TO LEFT

32.34 + 125.2

$$\begin{array}{r} 125.20 \\ +\ \ 32.34 \\ \hline 157.54 \end{array}$$

© Teach to Love Learning

SUBTRACTING decimals

1. LINE UP THE DECIMALS
2. FILL IN ZEROES TO MAKE IT LOOK SQUARE
3. DROP DOWN THE DECIMAL
4. ADD FROM RIGHT TO LEFT

$$52 - 27.35$$

$$\begin{array}{r} 52.00 \\ -\ 27.35 \\ \hline 24.65 \end{array}$$

© Teach to Love Learning

FINDING EQUIVALENT fractions

MULTIPLY THE NUMERATOR AND DENOMINATOR BY THE SAME NUMBER.

$$\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$$

DIVIDE THE NUMERATOR AND DENOMINATOR BY THE SAME NUMBER.

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

© Teach to Love Learning

MULTIPLYING fractions

FRACTION BY FRACTION

Step 1: Multiply the numerators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{\quad}$$

Step 2: Multiply the denominators

$$\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

Step 3: Simplify

$$\frac{6}{20} \div \frac{2}{2} = \frac{3}{10}$$

© Teach to Love Learning

MULTIPLYING fractions

FRACTION BY WHOLE

STEP 1: Rewrite whole number as a fraction

$$\frac{1}{4} \times 5 \longrightarrow \frac{5}{1}$$

STEP 2: Multiply

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

STEP 3: Simplify

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

© Teach to Love Learning

MULTIPLYING fractions

MIXED NUMBERS

STEP 1: Convert mixed numbers into improper fractions

$$1\ \frac{1}{2} \times 2\ \frac{1}{5} \longrightarrow \frac{3}{2} \times \frac{11}{5}$$

STEP 2: Multiply

$$\frac{3}{2} \times \frac{11}{5} = \frac{33}{10}$$

STEP 3: Convert back into a mixed number

$$\frac{33}{10} = 3\ \frac{3}{10}$$

© Teach to Love Learning

DIVIDING fractions

KEEP CHANGE FLIP

SET UP THE PROBLEM

$$\frac{2}{3} \div \frac{1}{4}$$

MULTIPLY BY THE RECIPROCAL

$$\frac{2}{3} \times \frac{4}{1}$$

SIMPLIFY THE ANSWER

$$\frac{8}{3}$$

© Teach to Love Learning

ADDING fractions

UNLIKE DENOMINATORS

1. Find the least common denominator
2. Add the numerators
3. Denominator doesn't change
4. Simplify

write

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

$$\frac{2 \times 3}{4 \times 3} \quad \frac{6}{12}$$

$$\frac{1 \times 4}{3 \times 4} \quad \frac{4}{12}$$

lcd

$$\frac{6}{12} + \frac{4}{12} = \frac{10}{12}$$

solve

$$\frac{10 \div 2}{12 \div 2} = \frac{5}{6}$$

simplify

© Teach to Love Learning

SUBTRACTING fractions

UNLIKE DENOMINATORS

1. Find the least common denominator
2. Subtract the numerators
3. Denominator doesn't change
4. Simplify

write

$$\frac{5}{8} - \frac{1}{4}$$

$$\frac{5}{8} \qquad \frac{5}{8}$$

$$\frac{1}{4} \times \frac{2}{2} \qquad \frac{2}{8}$$

LCD

$$\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$$

SOLVE

$$= \frac{3}{8}$$

© Teach to Love Learning

ADDING & SUBTRACTING fractions

LIKE DENOMINATORS

ADDING

1. ADD THE NUMERATORS
2. DENOMINATOR DOESN'T CHANGE
3. SIMPLIFY

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

SUBTRACTING

1. SUBTRACT THE NUMERATORS
2. DENOMINATOR DOESN'T CHANGE
3. SIMPLIFY

$$\frac{5}{6} - \frac{3}{6} = \frac{2}{6} = \frac{1}{3}$$

Divide top and bottom by 2

© Teach to Love Learning

FINDING A common DENOMINATOR

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

3	6	9	12
2	4	6	8

LIST THE MULTIPLES OF EACH DENOMINATOR

IDENTIFY THE LEAST COMMON MULTIPLE

WRITE EQUATIONS TO CHANGE EACH FRACTION'S DENOMINATOR TO THE LCM

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

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

SOLVE

© Teach to Love Learning

THREE WAYS TO SHOW DIVISION

$$18 \div 3 = 6$$

Dividend Divisor Quotient

Dividend $\frac{18}{3} = 6$

Divisor Quotient

$$6 \text{ Quotient}$$

$$3 \overline{)18}$$

Divisor Dividend

© Teach to Love Learning

DECIMAL ÷ decimals

using fractions

$$2.4 \div 0.2$$

$$= \frac{2.4}{0.2}$$

We can re-write division like a fraction.

$$= \frac{2.4}{0.2} \times \frac{10}{10}$$

Creating an equivalent fraction.

$$= \frac{24}{02}$$

$$= 12$$

Gives us whole numbers!

© Teach to Love Learning

MULTIPLYING x decimals

$$
\begin{array}{r}
2.43 \\
\times\ 1.2 \\
\hline
526 \\
2430 \\
\hline
2.956
\end{array}
$$

Ignore the decimals and multiply like normal.

Count your decimal spaces and add the total number of jumps to your final product.

© Teach to Love Learning

Multiplying by Multiples of 10

x 10 = 1 space to the RIGHT
x 100 = 2 spaces to the RIGHT
x 1,000 = 3 spaces to the RIGHT

Dividing by Multiples of 10

÷ 10 = 1 space to the LEFT
÷ 100 = 2 spaces to the LEFT
÷ 1,000 = 3 spaces to the LEFT

© Teach to Love Learning

ORDERING *decimals*

Step 1:
Line up your decimal place vertically

8.354
8.34

Step 2:
Look left to right horizontally (add zeroes and compare)

8.354
8.340

Step 3:
Find the greatest place that's different, the greater number will become apparent. (order least to greatest)

8.354
8.340

5>4 so 8.354 is greater than 8.34

© Teach to Love Learning

LONG division

Dividend ÷ Divisor = Quotient

5616 ÷ 9 = 624

DIVIDE

Divide first number

MULTIPLY

SUBTRACT

CHECK

BRING DOWN

REPEAT OR REMAINDER

$$
\begin{array}{r}
0624 \\
9\overline{)5616} \\
-0 \\
\hline
56 \\
-54 \\
\hline
21 \\
-18 \\
\hline
36 \\
-36 \\
\hline
0
\end{array}
$$

© Teach to Love Learning

AREA

The amount of square units to fill an object.

4

2

1	2	3	4
5	6	7	8

PERIMETER

The distance around an object. $4 + 2 + 4 + 2 = 12$

© Teach to Love Learning

ORDER OF *operations*

P **PARENTHESIS**
( ) { } [ ]

E **EXPONENTS**
$2^3 - 3$
8 -3 =5

M **MULTIPLICATION**
and
D **DIVISION**
from left to right

A **ADDITION**
and
S **SUBTRACTION**
from left to right

PLEASE EXCUSE MY DEAR AUNT SALLY

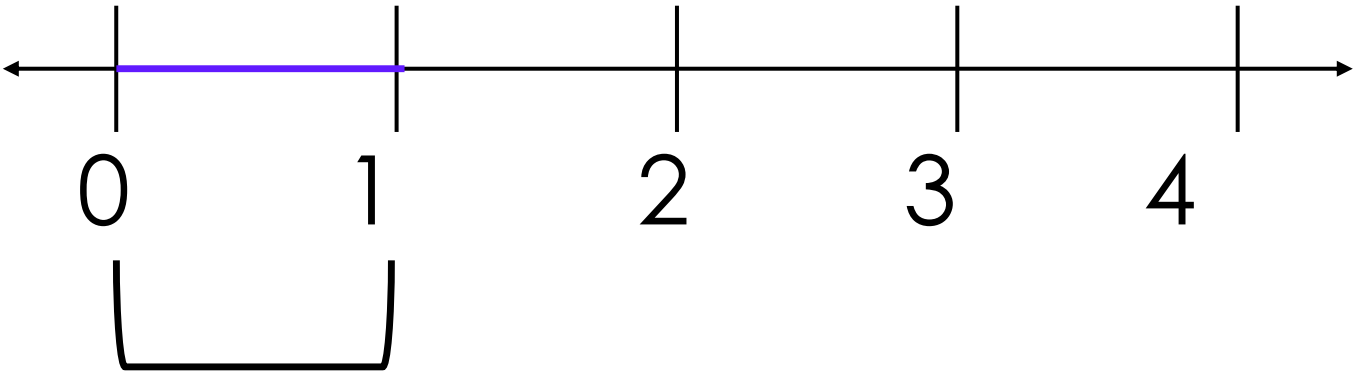
© Teach to Love Learning

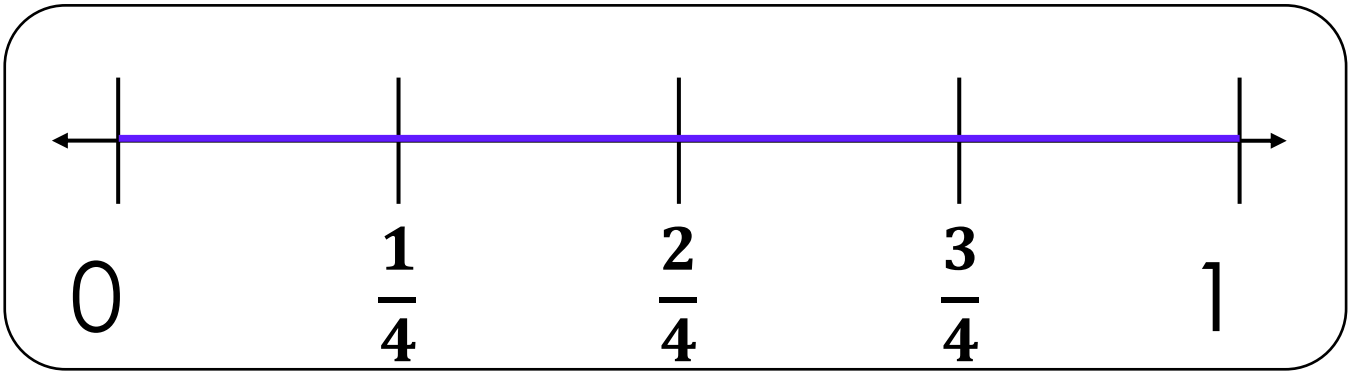
FRACTIONS

ON A NUMBER LINE

A fraction is a part of a whole.

If you zoom in on a number line, between each whole number, are fractions parts of each whole number.





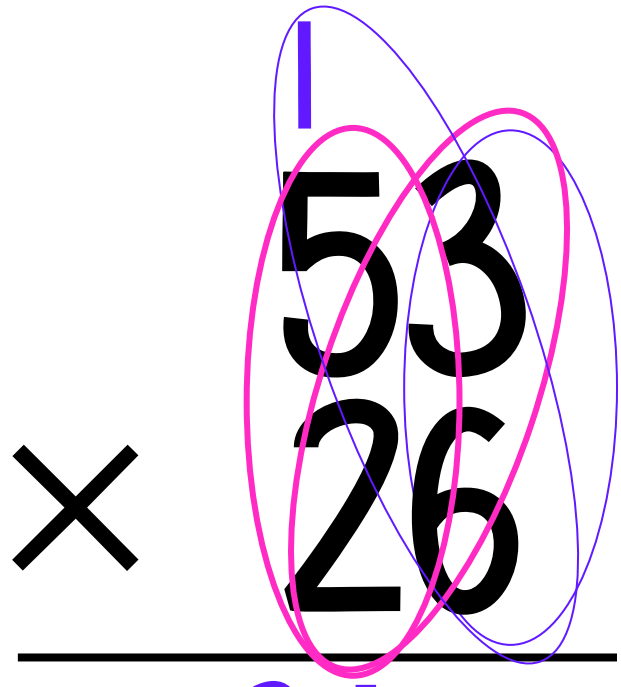
Fractions fall BETWEEN whole numbers.

© Teach to Love Learning

MULTIPLICATION

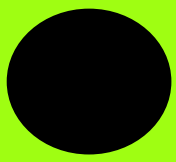
Step 1: Multiply Step 2: Zero

Step 3: Multiply Step 4: Add



© Teach to Love Learning

Turn this way

	Thousands
	Hundreds
	Tens
	Ones
	Decimal
	Tenths
	Hundredths
	Thousandths

© Teach to Love Learning

ORDERING DECIMALS

1. Line up your decimals
2. Fill in placeholders (zeroes) if needed
3. Look left to right
4. Find the first place that's not alike
5. Order/compare decimals

4.103

4.120 *Greatest*

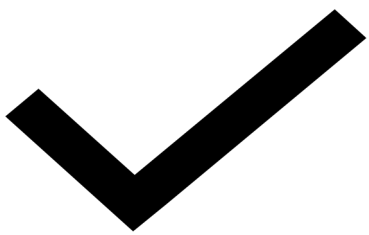
© Teach to Love Learning

C Circle key numbers and units

U Underline the question

B Box key words

E Eliminate unnecessary information

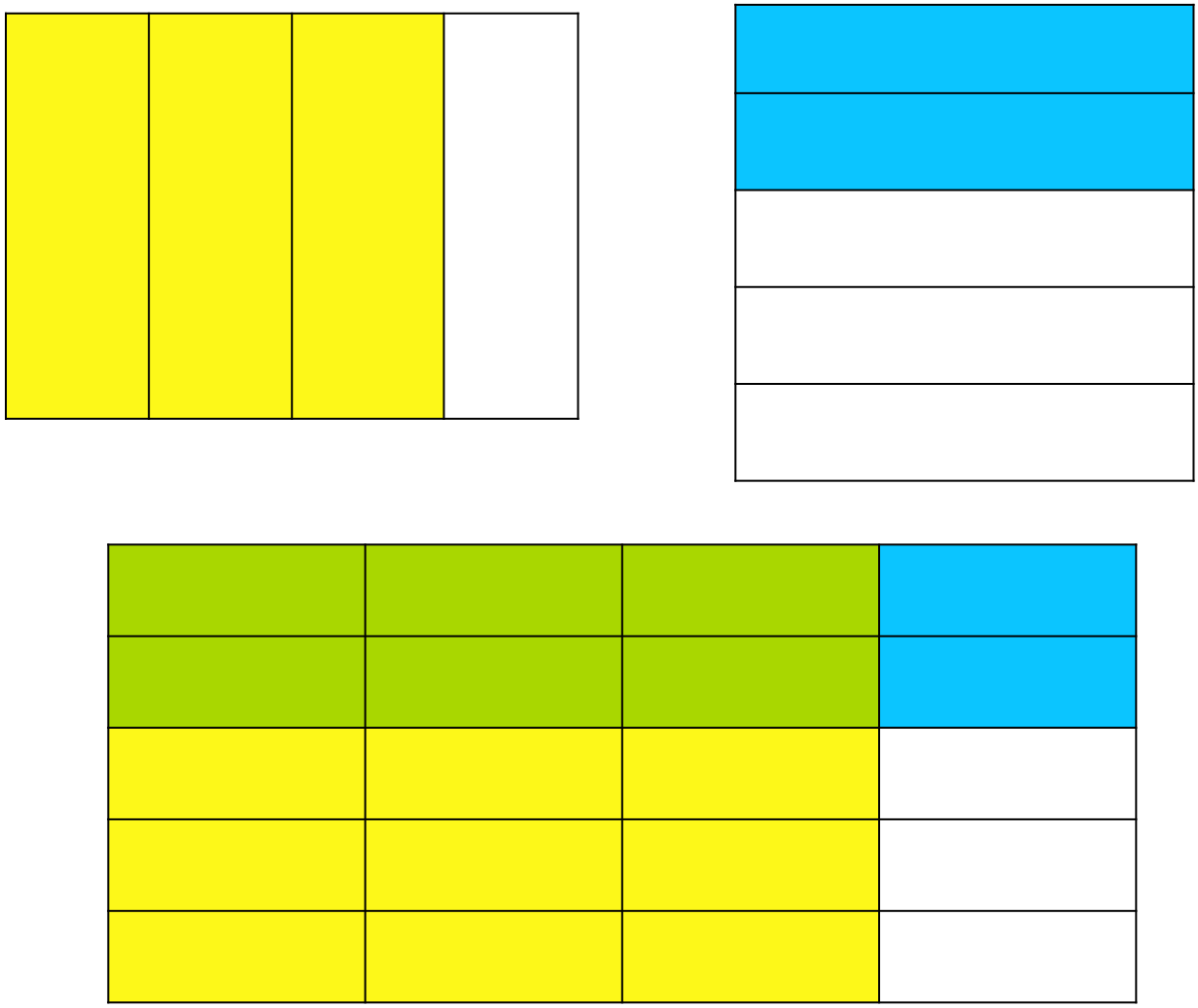
S Solve and Check 

© Teach to Love Learning

Area of a rectangle with fractions as lengths

Find the area of a rectangle that is 3/4 by 2/5.

$$\frac{3}{4} \quad x \quad \frac{2}{5}$$



The area is 6/20 because the overlapping area shows 6 tiles (part) and the total number of tiles colored in is 20 (whole)

© Teach to Love Learning

Mixed Number

to improper fraction

M Multiply the whole number by the denominator

A Add the product to the numerator to create a new numerator

D Denominator stays the same

Improper Fraction

to mixed number

1. Divide the numerator by the denominator
2. The whole number in the quotient is the whole number in the mixed number
3. The remainder is the numerator in the fraction of the mixed number
4. Denominator stays the same

© Teach to Love Learning

MIXED NUMBER

a whole number and a fraction combined into one mixed number

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

© Teach to Love Learning

COMMON MULTIPLE

when two or more numbers have a multiple in common.

2	2	4	6
4	4	8	12

4 is a common multiple of 4 and 2.

© Teach to Love Learning

COMMON FACTOR

when two or more numbers have a factor in common.

1	2	3	6
1	2	4	8

2 is a common factor of 6 and 8.

© Teach to Love Learning

PROPER FRACTION

when the numerator of a fraction is less than the denominator and the fraction is less than one whole.

$\frac{2}{3}$ $\frac{1}{2}$ $\frac{5}{7}$

© Teach to Love Learning