Maths- Fractions

This lesson will be live on teams for your class at;

9am-5L

10am-5H

11am-5M

Learning objective; To simplify fractions using the highest common factor.

Warm up- What are the common factors of…..

a) 12 and 18

b) 24 and 30

c) 40 and 120

d) 15 and 45

e) 24 and 36

Finding the ‘greatest common factor’

As we know, factors are numbers which divide into a product to make a whole number.

Common factors are factors that are found in 2 or more specific numbers.

Greatest Common factor

The greatest common factor is the largest factor found in two or more numbers. To find the ‘GCF’ you will need to list the factors of your numbers, and find which common factor is the largest.

Finding the Greatest Common factor

This is a simple task aslong as we can securely find the factors of a number.

What is the GCF of 12 and 32?

Start by listing the factors of your numbers
(this is why Mr L recommends to write them in order)

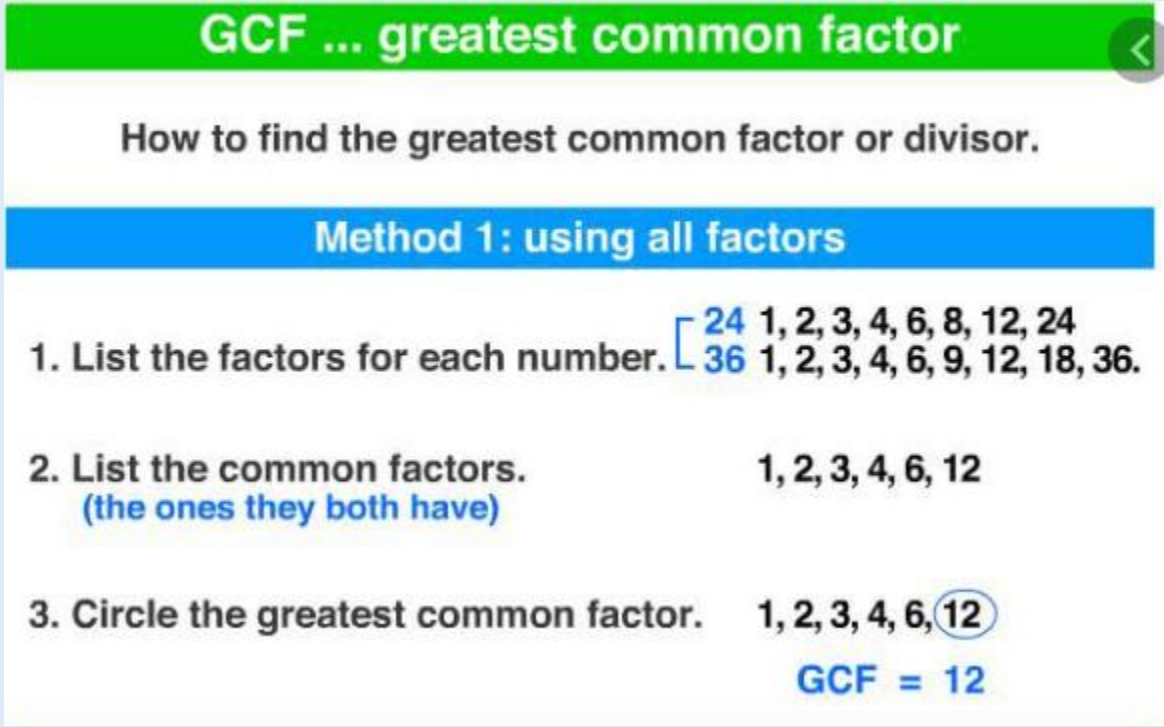
12- 1,2,3,4,6,12

32-1,2,4,8,16,32

Then circle the largest number found in both lists of factors.

12- 1,2,3,4,6,12

32-1,2,4,8,16,32 **so 4 if the GCF of 12 and 32.**



Lets find some together with examples on Mr L's board.

Fluency

1) 2, 8

GCF = _____

2) 10, 30

GCF = _____

3) 24, 50

GCF = _____

4) 4, 48

GCF = _____

5) 16, 32

GCF = _____

6) 6, 21

GCF = _____

7) 33, 44

GCF = _____

8) 21, 35

GCF = _____

GCF ... greatest common factor

How to find the greatest common factor or divisor.

Method 1: using all factors

1. List the factors for each number. 24: 1, 2, 3, 4, 6, 8, 12, 24; 36: 1, 2, 3, 4, 6, 9, 12, 18, 36.

2. List the common factors. (the ones they both have) 1, 2, 3, 4, 6, 12

3. Circle the greatest common factor. 1, 2, 3, 4, 6, (12)

GCF = 12

Using GCF to simplify fractions

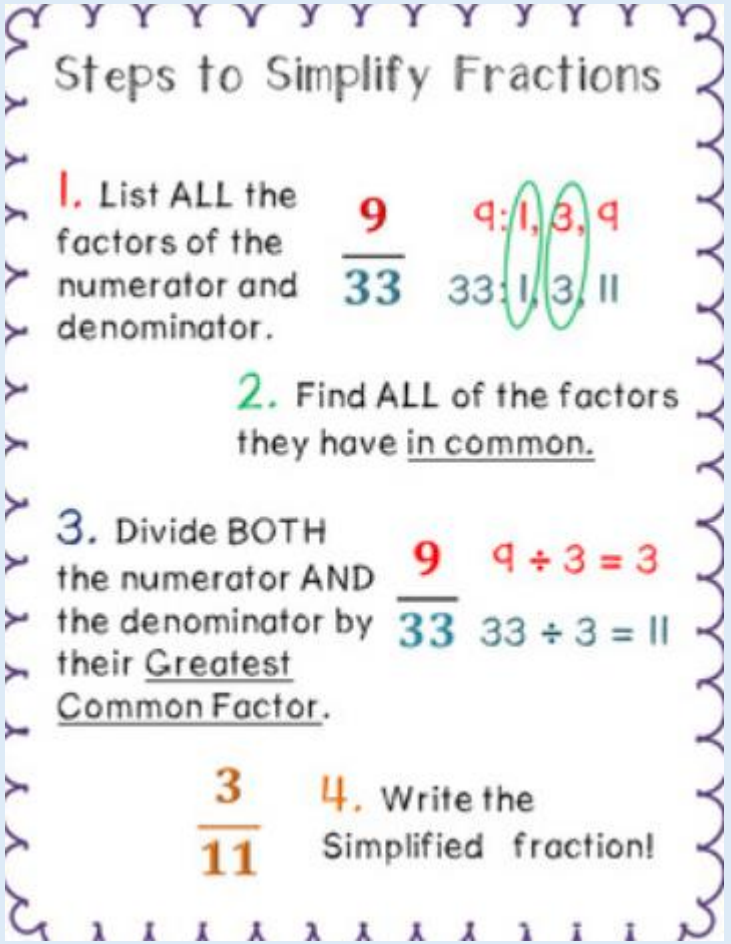
We know that even though fractions may have different numerators and denominators, they can have the same value.

That means that the fractions are equivalent.

For example; 40/100 is equivalent to ½

Simplifying fractions is all about finding the smallest term of the fraction.

½ is a much smaller term than 40/100… but the have the same value.



How we do it?

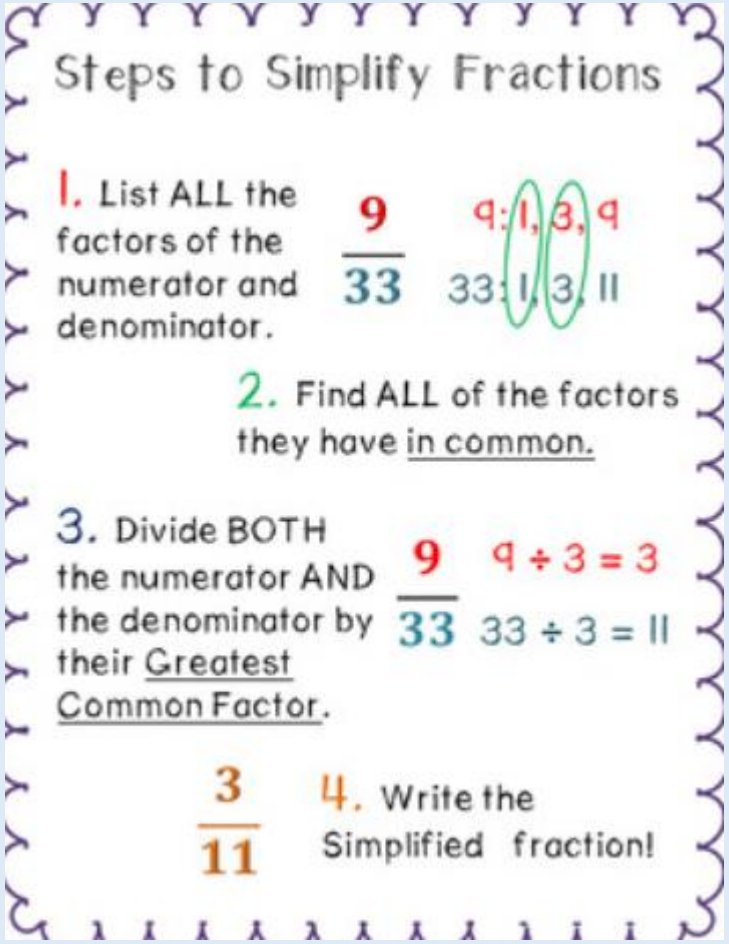
First, list the factors of the numerator and the denominator.

Next, find the greatest common factor.

After that, Divide both the numerator and the denominator by the GCF.

This will then create your simplified fraction.

Lets do some examples with Mr L……



Fluency

Fraction	Highest Common Factor	Simplified Fraction
$\frac{4}{12}$	4	$\frac{1}{3}$
$\frac{3}{9}$		
$\frac{6}{8}$		
$\frac{10}{15}$		
$\frac{8}{14}$		
$\frac{10}{12}$		
$\frac{6}{18}$		
$\frac{9}{18}$		
$\frac{12}{16}$		

Answers

Fraction	Highest Common Factor	Simplified Fraction
$\frac{4}{12}$	4	$\frac{1}{3}$
$\frac{3}{9}$	**3**	$\frac{\mathbf{1}}{\mathbf{3}}$
$\frac{6}{8}$	**2**	$\frac{\mathbf{3}}{\mathbf{4}}$
$\frac{10}{15}$	**5**	$\frac{\mathbf{2}}{\mathbf{3}}$
$\frac{8}{14}$	**2**	$\frac{\mathbf{4}}{\mathbf{7}}$
$\frac{10}{12}$	**2**	$\frac{\mathbf{5}}{\mathbf{6}}$
$\frac{6}{18}$	**6**	$\frac{\mathbf{1}}{\mathbf{3}}$
$\frac{9}{18}$	**9**	$\frac{\mathbf{1}}{\mathbf{2}}$
$\frac{12}{16}$	**4**	$\frac{\mathbf{3}}{\mathbf{4}}$

Plenary- What is the question?

Here is an answer, can you write 3 questions that results in this fraction?