

Name \_\_\_\_\_

Date \_\_\_\_\_

## Greatest Common Factor and Least Common Multiple - Guided Lesson Explanation

### Explanation#1

Step 1) We know that the least common multiple (LCM) is the least whole number that is a multiple of both the numbers.

Step 2) List the multiples of each number. Find the lowest number that appears in both lists.

Least Common Multiple of 8: 8, 16, 24, 32, **40**, 48, 56, 64, 72, **80**

Least Common Multiple of 10: 10, 20, 30, **40**, 50, 60, 70, **80**

So, the least common multiple of 8 and 10 is 40

### Explanation#2

**The greatest common factor** is the greatest whole number that is a factor of each of the numbers.

List the factors of each number. Find the largest number that appears in both lists.

a) Greatest common Factors of: 12, 9, 3

List all the factors that they have in common: 1, 3

So the answer is 3.

b) Greatest common Factors of: 54, 27, 18

List all the factors that they have in common: 1, 3, 9

So the answer is 9.

**The least common multiple** is the smallest whole number that is a multiple of each of two or more numbers.

List the multiples of each number. Find the lowest number that appears in both lists.



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c) Least Common Multiple of: 6, 12, 18

List the matching multiples of all numbers:

**6:** 6, 12, 18, 36

**12:** 12, 24, 36

**18:** 18, 36

We can see that 36 appears to be the first number that is a multiple of all the numbers that were presented.

d) Least Common Multiple of: 24, 36, 60

Again list all the factors. The first one that appears in all three is the LCM.

**24:** 24, 72, ..., 360

**36:** 72, ..., 360

**60:** 120, ..., 360

360 is our LCM in this case.

### Explanation#3

Step 1) We know that the greatest common factor is the greatest whole number that is a factor of each of two or more numbers. List the all the factors of both numbers:

Factors of 16: **1, 2**, 4, 8, 16

Factors of 18: **1, 2**, 3, 6, 9, 18

Then find the largest number that appears in both lists.

So, the greatest common factor of 16 and 18 is 2.

