

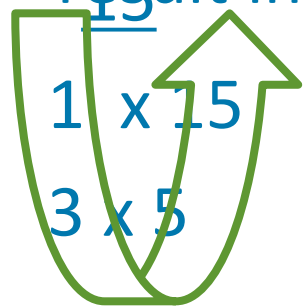
How do you find the Greatest Common
Factor(GCF) of two or more
numbers?

For example, how do you find the Greatest
Common Factor of 32 and 60?

In this lesson you will learn how to find the Greatest Common Factor of two or more numbers by creating and comparing a list of factors for each.

Let's Review

factor - one of two whole numbers that when multiplied together result in a product



The factors of 15 are 1, 3, 5 and 15.

The set of factors for 15 is

$\{ 1, 3, 5, 15 \}$.

Let's Review

Prime numbers have only two factors, one and themselves.

7 is a prime number. $7 \times 1 = 7$

Composite numbers have more than two factors.

10 is a composite number.

$$1 \times 10 = 10$$

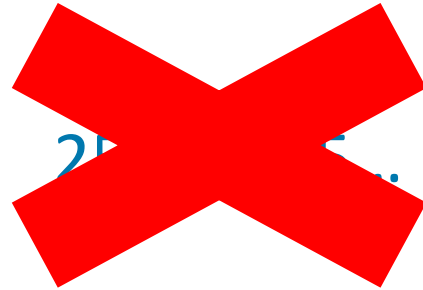
$$2 \times 5 = 10$$

A Common Misunderstanding

Confusing factors with multiples

Find the factors of 25.

1, 5, 25



Core Lesson

How do you find the Greatest Common Factor
32 and 60?

Create a complete list of factors
for both numbers.

Factors of 32

$$1 \times 32$$

$$2 \times 16$$

$$4 \times 8$$

Factors of 60

$$1 \times 60$$

$$2 \times 30$$

$$3 \times 20$$

$$4 \times 15$$

$$5 \times 12$$

$$6 \times 10$$

Core Lesson

Factors of 32

$$\{ = 1, 2, 4, 8, 16, 32 \}$$

$$1 \times 32$$

$$2 \times 16$$

$$4 \times 8$$

Factors of 60

$$= \{ 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60 \}$$

$$1 \times 60$$

$$2 \times 30$$

$$3 \times 20$$

$$4 \times 15$$

$$5 \times 12$$

$$6 \times 10$$

Core Lesson

Compare lists.

Factors of 32

{ 1, 2, 4, 8, 16, 32 }

Factors of 60

= { 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60 }

Which factors do 32 and 60 have in common?

The set of common factors for 32 and 60 is { 1, 2, 4 }

Core Lesson

The set of common factors for 32 and 60 is $\{ 1, 2, 4 \}$

The Greatest Common Factor (GCF) for 32 and 60 is 4.

Core Lesson

Let's find the GCF for 12, 14 and 20.

Factors for 12 are {1, 2, 3, 4, 6, 12}.

Factors for 14 are {1, 2, 7, 14}.

Factors for 20 are {1, 2, 4, 5, 10, 20}.

The common factors for 12, 14 and 20 are { 1, 2 }.

The GCF for 12, 14 and 20 is 2.

In this lesson you have learned how to find the Greatest Common Factor of two or more numbers by creating and comparing a list of factors for each.