

**Study the following.**

factor (**fak-tur**) – factor has two definitions that mean the same thing but are different ways of looking at it.

- a. one of the numbers multiplied to get a product.

Example:  $5 \longleftarrow \text{factor}$   
 $\begin{array}{r} \times 6 \\ \hline 30 \end{array} \longleftarrow \text{factor}$

- b. a whole number that can be divided exactly into a larger number.

Example: 5 can be divided exactly into 30  
 6 can be divided exactly into 30  
 Therefore 5 and 6 are factors of 30.

factoring (**fak-tur-ing**) – The action of separating a number into its factors. You are actually dividing. This word is a verb, so it could be in different forms: will factor, factored, factoring, etc.

Examples: I factored 10 into 2 times 5.  
 I will factor 20 into  $2 * 10$ .  
 I was factoring the number 40 into  $2 * 2 * 10$ .

listing all possible factors – Sometimes you are asked to list all the possible factors of a number. This means you should list all the numbers that can exactly divide into the number.

Example: List all possible factors of 20. They are 1,2,4,5,10, and 20.

**Say each word out loud and write it in the blank.**

factor \_\_\_\_\_  
 factoring \_\_\_\_\_

**Write each definition in your own words.**

factor (definition a.)

factor (definition b.)

factoring

listing all possible factors

**Write 6 examples of multiplication problems and label all the factors.**

$$\begin{array}{r} 4 \leftarrow \text{factor} \\ \times 5 \leftarrow \text{factor} \\ \hline 20 \end{array}$$

**Write one number that can be divided exactly into the following, and label it a factor.**

Example: 12    2 is a factor

1.    10    \_\_\_\_\_

2.    4    \_\_\_\_\_

3.    8    \_\_\_\_\_

4.    15    \_\_\_\_\_

5.    30    \_\_\_\_\_

6.    100    \_\_\_\_\_

7.    6    \_\_\_\_\_

8.    49    \_\_\_\_\_

9.    35    \_\_\_\_\_

Use the word **factoring** as a verb in 6 sentences.

You can use forms of the verb like **will factor**, **factored**, **factoring**, etc.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

List all possible factors for the following. One and the number are always factors of a number.

Example: 45: 1, 3, 5, 9, 15, 45      Since  $\begin{array}{r} 45 \\ \times 1 \\ \hline 45 \end{array}$        $\begin{array}{r} 15 \\ \times 3 \\ \hline 45 \end{array}$        $\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$

1.    15: \_\_\_\_\_
  
2.    35: \_\_\_\_\_
  
3.    8 : \_\_\_\_\_
  
4.    25: \_\_\_\_\_



**Study the following words.**

common (**kom**-uhn) - something that two things share or both have the same.  
(Jill is our common friend. Bill and Jeff have a common kitchen where they both cook.)

greatest (**grayt**-ist) - largest, biggest (Sally has 20 CDs and Mike has 30, so Mike has the greatest collection.)( Of the numbers 3,4,and 7, the greatest is 7.)

common factor- when two or more numbers share the same factor.

greatest common factor- the largest shared factor two or more numbers has.

GCF –greatest common factor

**Say each word out loud and write it in the blank.**

common \_\_\_\_\_  
greatest \_\_\_\_\_

**Write each definition in your own words.**

common

greatest

common factor

greatest common factor

GCF

**Write two sentences using each word.**

common

1.

2.

greatest

1.

2.

**List all possible factors, then circle the common factors of the pairs of numbers.**

Example: 10: (1, 2, 5, 10)  
 15: (1, 3, 5, 15)

1. 4:  
 6:

2. 10:  
 20:

3. 12:  
 18:

4. 25:  
 100:

5. 35:  
 15:

6. 8:  
 20:

7. 49:  
 14:

8. 35:  
 10:

**What does GCF stand for?** \_\_\_\_\_

**Find the GCF.**

Example: 9:  $\circled{1}, \circled{3}, 9$  First list all possible factors.  
12:  $\circled{1}, \circled{2}, \circled{3}, 4, 6, 12$  Next circle the common factors.  
Now pick the largest, which is 3.

1. 21  
30

2. 16  
24

3. 50  
75

4. 8  
28

5. 32  
36

**Study the following.**

multiple (muhl-tuh-puhl)- a multiple has two definitions that are the same, but two different ways of looking at it.

- a. a number that can be divided by another number, two or more times, exactly. Example: 12 can be divided exactly by 3 so 12 is a multiple of 3.
- b. In a multiplications problem you can say the answer is a multiple of both the factors.  
Example: if 3 times 4 is 12, then 12 is a multiple of 3 and a multiple of 4.

$$\begin{array}{r} 3 \quad \text{factor} \\ \times 4 \quad \text{factor} \\ \hline 12 \end{array} \quad \text{so 12 is a multiple of both 3 and 4}$$

listing multiples of a number- to list multiples of a number, multiply the number by 1 then 2 then 3 etc.

example: multiples of 3 are :  $3 \times 1 = 3$

$$3 \times 2 = 6$$

$$3 \times 3 = 9$$

$$3 \times 4 = 12$$

$$3 \times 5 = 15$$

$$3 \times 6 = 18$$

etc.

list the multiples of 3: 3, 6, 9, 12, 15, 18, etc.

**Say the word out loud and write it in the blank.**

multiple \_\_\_\_\_

**Write each definition in your own words.**

multiple (definition a.)

multiple (definition b.)



**List the first 6 multiples of the following.**

1. 2

2. 4

3. 5

4. 10

**Study the following words.**

least ( leest) - the smallest (He has the least books of all the students.)(Of the numbers 10 and 20, 10 is the least.)

common multiple- when two or more numbers both have the same multiple.

Example: multiples of 2 are : 2,4, 6, 8,10, 12, 14, 16, 18...

multiples of 4 are : 4 ,8, 12 ,16,...

The first 4 common multiples are 4, 8, 12, and 16.

Least common multiple- the smallest of the common multiples.

In the example above, the least of the common multiples is 4.

LCM- least common multiple

**Say the word out loud and write it in the blank.**

least \_\_\_\_\_

**Write each definition in your own words.**

least

common multiple

least common multiple

LCM

**Write two sentences using the word least.**

1.

2.

**Fill in the blank.**

LCM stands for \_\_\_\_\_.

**Find the least common multiple for the two numbers.**

Example:    2: 2, 4, 6, 8, 10, 12  
              4:    4,    8,    12

1.    3:  
      4:

2.    6:  
      4:

3.    10:  
      15:

4.    50:  
      100:

5.    5:  
      6:

6.    7:  
      8:

**Solve these review problems on factoring and multiples.**

1. 10 has factors of 1, 2, 5, 10  
 15 has factors of 1, 3, 5, 15  
 The GCF is \_\_\_\_\_.
2. GCF stands for \_\_\_\_\_.
3. What are all the possible factors of 9? \_\_\_\_\_.
4. The multiples of 6 are 6, 12, 18, 24, 30, 36, ...  
 The multiples of 9 are 9, 18, 27, 36...  
 What is the LCM? \_\_\_\_\_
5. LCM stands for \_\_\_\_\_.
6. Circle the factors.  $4 \times 5 = 20$
7. Label
 

8		←
$\times 2$		←
16		←
8. List the possible factors of 10. \_\_\_\_\_
9. List the first 7 multiples of 4. \_\_\_\_\_
10. List the possible factors of 36. \_\_\_\_\_
11. List the first 8 multiples of 6.  
 \_\_\_\_\_
12. What is the GCF of 3 and 9?
13. What is the LCM of 3 and 9?
14. What is the GCF of 10 and 15?
15. What is the LCM of 10 and 15?