Finding and Using The Greatest Common Factor (GCF) of two or  more numbers:

1.   If your know the numbers (factors) used to make the number when multiplying, list them and begin the first row of the tree with them.

2.   If you do not know the numbers used to make them, use the divisibility rules or a multiplication chart to find some factors to begin with.

An example, find the Greatest Common Factor of 36 and 48:

         36                                 48

      4 X 9                             6 X 8

**2** X **2** X **3** X 3              2 X 3 X 2 X 4

**2** X **3** X **2** X 2 X 2

The bottom row of the trees must be taken down to their prime numbers, meaning the only way these numbers can be made is to take the number itself times 1 (2X1=2). Students have a chart listing these prime numbers.

Next we pair up common factors (these are underlined in the bottom row).

Now we have two pairs of 2’s and a pair of 3’s. Each pair is partnered and is listed only once. If there is another pair, that pair is partnered and listed once. Numbers that are not able to be paired up are not used.

Last step, take the numbers that we partnered up and multiply them together to get the GCF:

 The GCF is then 2 X 2 X 3 = 12