Math Study Guide: Factors, factor rainbow, multiples, prime and composite.

**MCC4.OA.4** Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite

**Definitions and Applications:**

Students should be able to identify and find the factors and multiples of numbers

(1-100) as well as identify a number as prime or composite.

**Factors**-the numbers multiplied together to find a product

Example: 3 x 6 = 18

Factors

Students should be able to find all the factors for a given number. Example: 34 { 1, 2, 17, 34} or 8 { 1, 2, 4, 8}

**Common factors**- factors which numbers both have such as 34 and 8 have a common factor of 2.

**Factoring rainbows** are used in elementary math to teach children how to factor numbers.

For example: To factor 24, you would place 1 on the far left and 24 towards the far right. You draw a curve from the 1 to the 24. Next, you place all the other numbers in between that when multiplied together equal 24. You draw a curved line from each number to the other number that when multiplied equals 24. Thus, a Factor Rainbow.

1, 2, 3, 4, 6, 8,12, 24

Students should be able to define a number as prime or composite. (NOTE: 1 is neither a prime number or a composite number!) Prime numbers are whole numbers which do not have other factors than itself and 1. Example: 7 is a prime number because the factors for 7 are {1,7}.

**Composite numbers** are whole numbers which have more than one set of factors. Example: 14 is a composite number because the factors for 14 are {1, 2, 7, 14}. HINT: All even numbers expect 2 are composite and all numbers which are multiples of 10 are composite numbers.

**Multiples**- Example: multiples of 3 are 3, 6, 9, 12, 15, 18, 21,…

Student should be able to find common multiples and least common multiple.

Example: 4 : 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60

6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60