1.4

Prime Factorization

Activity Work with a partner.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

a. **Highlight all the numbers that are divisible by 2.**

b. **Put a box around the numbers that are divisible by 3.**

c. **Underline the numbers that are divisible by 5.**

d. **Circle the numbers that are divisible by 10.**

Finding Patterns What patterns do you notice?

a. What is a rule to determine a number divisible by 2.

b. What is a rule to determine a number divisible by 3.

c. What is a rule to determine a number divisible by 5.

d. What is a rule to determine a number divisible by 10.

Finding Patterns What patterns do you notice?

a. List ten numbers that are divisible by 6

b. Write a rule to determine when a number is divisible by 6.

Finding Patterns What patterns do you notice?

a. List ten numbers that are divisible by 9.

b. Write a rule to determine when a number is divisible by 9.

Example 1

The brass section of a marching band has 30 members. The band director arranges the brass section in rows. Each row has the same number of members. How many possible arrangements are there?

Example 2

There are 40 members in the book club at school. Each member sits at a desk. Each row needs to have the same numbers of desks. How many possible arrangements are there?

Factor Pairs

List all the factor pairs for the following:

1) 18

2) 24

3) 26

Prime Factorization

Find the prime factorization for the following

4)   **20**

Prime Factorization

Find the prime factorization for the following

5)   **36**

Prime Factorization

Find the prime factorization for the following

6)   **48**

Finding the number...

Find the number represented by the prime factorization.

7) $2^2 \bullet 3^2 \bullet 5$