

## ***Powers and Exponents***

**A power is the product of multiplying a number by itself.**

Usually, a power is represented with a base number and an exponent.

The base number tells what number is being multiplied. The exponent, a small number written above and to the right of the base number, tells how many times the base number is being multiplied.

For example, "6 to the 5th power" may be written as "6<sup>5</sup>." Here, the base number is 6 and the exponent is 5.

This means we are multiplying five 6's together:

$$6 \times 6 \times 6 \times 6 \times 6 = 6^5 \text{ or } 7,776$$

The following table reflects impact of raising base numbers 1-12 to the powers of 2 through 5.

Base number	2nd power	3rd power	4th power	5th power
1	1	1	1	1
2	4	8	16	32
3	9	27	81	243
4	16	64	256	1,024
5	25	125	625	3,125
6	36	216	1,296	7,776
7	49	343	2,401	16,807
8	64	512	4,096	32,768
9	81	729	6,561	59,049
10	100	1,000	10,000	100,000
11	121	1,331	14,641	161,051
12	144	1,728	20,736	248,832