Activity: Prefixes and Conversions

Purpose

1. To understand the conventional notation used in Scientific and Engineering Notation
2. To practice conversions from one notation to another

Equipment

None

Procedure

Whole values have **NO** prefixes and have all of the zeros and original decimal locations. Some of the types are listed below:

- Amperes Amps A
- Voltage Volts V
- Ohms Ω
- Farad fd
- Hertz Hz CPS

Examples of a **prefix and whole value** used together:

- 1.5 Kohms instead of 1500 ohms
- 450 ufd instead of .000450 farads
- 2.4 MΩ instead of 2,400,000 Ω
- 1180 KHz instead of 1,180,000 hertz
- 34 mA instead of .034 Amperes
- 150 uufd instead of .000000000150 farads

Part 1: Fill in the information below:

For **LARGER** values use the following prefixes:

MEGA:_____

Move the decimal point _____ spaces

Symbol: _____

Example: 10,000,000 ohms = _____

KILO:_____

Move the decimal point _____ spaces

Symbol: _____

Example: 3,000 ohms = _____

For **SMALLER** values use the following prefixes:

Milli:_____

Move the decimal _____ spaces

Symbol _____

Example: .0003 amps = _____

micro _____

Move the decimal point _____ spaces

Symbol: _____

Example: .000012 amps = _____

micro micro : _____

Move the decimal point _____ spaces

Symbol: _____

Example: .0000000000034 = _____

Pico: _____

Move the decimal point _____ spaces

Symbol: _____

Example: .000000000006 = _____

Which of the above prefixes can you use interchangeably?

- _____
- _____

Part 2:

Convert the following values:

1. 4500 ohms = _____K ohms = _____M ohms
2. 680,000 ohms = _____K ohms = _____M ohms
3. 2,700,000 ohms = _____K ohms = _____M ohms
4. 5.6 M ohms = _____ohms = _____K ohms
5. 2.6 K ohms = _____M ohms = _____ohms
6. 2.5 Amps = _____m Amps = _____u Amps
7. 15 uu Amps = _____u Amps = _____m Amps
8. 220 p fd = _____uu fd = _____u fd
9. 45 m A = _____u Amp = _____Amperes
10. 500 CPS = _____K Hz = _____Hertz
11. 5,700 Volts = _____ K Volts = _____M Volts
12. 11 m Amp = _____A = _____u Amps
13. 68,000,000 Ω = _____K ohms = _____ M Ω
14. 1,200 K Volts = _____*M Volts* = _____*Volts*

15. .002 m Amps = _____Amps = _____u Amps

16. 5.5 K Hz = _____Hertz = _____K CPS

17. 1000 p fd = _____uu fd = _____u fd

18. 75000 K Volts = _____Volts = _____ M Volts

Conclusion

1. Why do we use prefixes when explaining quantities?

2. There are many more scientific prefixes than those commonly used in electronics. Why do you think we only use the ones we do?