

## Resistor values worksheet

Resistors are rather small and come in many different values of resistance. If the manufacturer were to print the value of the resistor on the side of the resistor, it would be too small to read. Thus a clever way was devised to tell the value of a resistor. The resistors are all color coded.

- All the resistors we use have 4 color bands on them
- One of the bands is gold. This gold band has nothing to do with the value of the resistor. It tells you that the resistor is within 5% of its stated value. A silver band instead of a gold band would indicate that the resistor is within 10% of its stated value
- Hold the end of the resistor with both hands. Put the end with the gold band in your right hand and read the other color bands from left to right.
- The first color band indicates the first number of the resistor value
- The second color band indicates the second number of the resistor value
- The third color band indicates the number of zeroes that follow the first two numbers it is often called the multiplier band

The numbers that are indicated by the colors are:

Black =	0
Brown =	1
Red =	2
Orange =	3
Yellow =	4
Green =	5
Blue =	6
Violet =	7
Gray =	8
White =	9

*Example: The first three colors on a resistor are brown, black, and then red. What is the value of this resistor?*

*brown, black, red (number of zeroes)*  
↑     ↑     ↑  
1     0     00     or 1000Ω or 1 kΩ

Give the value of the following resistors given the colors.

1. brown, black, orange \_\_\_\_\_
2. blue, gray, brown \_\_\_\_\_
3. yellow, violet, yellow \_\_\_\_\_
4. brown, black, green \_\_\_\_\_
6. brown, black, brown \_\_\_\_\_
7. Brown, black, black \_\_\_\_\_
8. red, red, red \_\_\_\_\_
9. orange, orange, orange \_\_\_\_\_
10. yellow, violet, brown \_\_\_\_\_

Give the color code of the following resistors

1. 1,500  $\Omega$  \_\_\_\_\_
2. 1,000,000  $\Omega$  \_\_\_\_\_
3. 330  $\Omega$  \_\_\_\_\_
4. 470  $\Omega$  \_\_\_\_\_
5. 2.2 k $\Omega$  \_\_\_\_\_
6. 1000  $\Omega$  \_\_\_\_\_
7. 1 k $\Omega$  \_\_\_\_\_
8. 150  $\Omega$  \_\_\_\_\_
9. 150 k $\Omega$  \_\_\_\_\_
10. 68  $\Omega$  \_\_\_\_\_