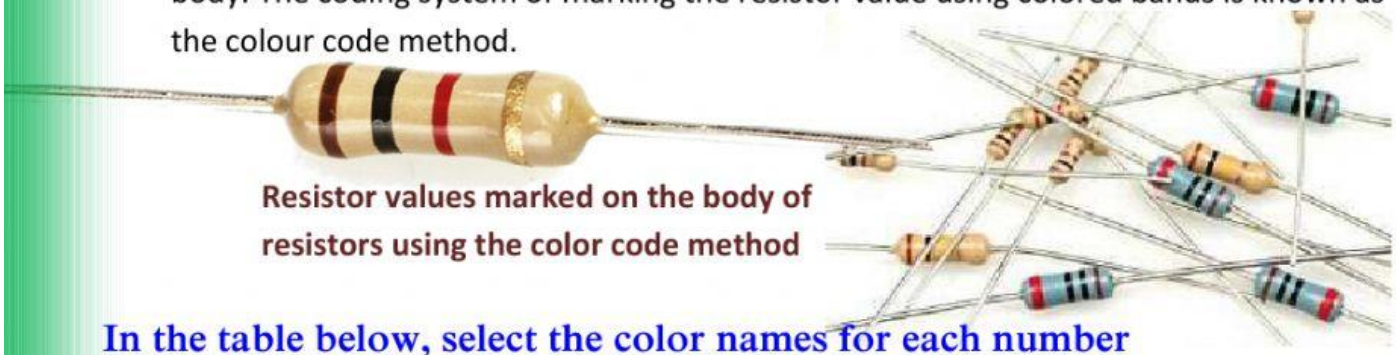
Grade 10 Science

Current electricity

Resistor colour code

Often, the value of a resistor is indicated in coded form by colour bands marked on its body. The coding system of marking the resistor value using colored bands is known as the colour code method.



Resistor values marked on the body of resistors using the color code method

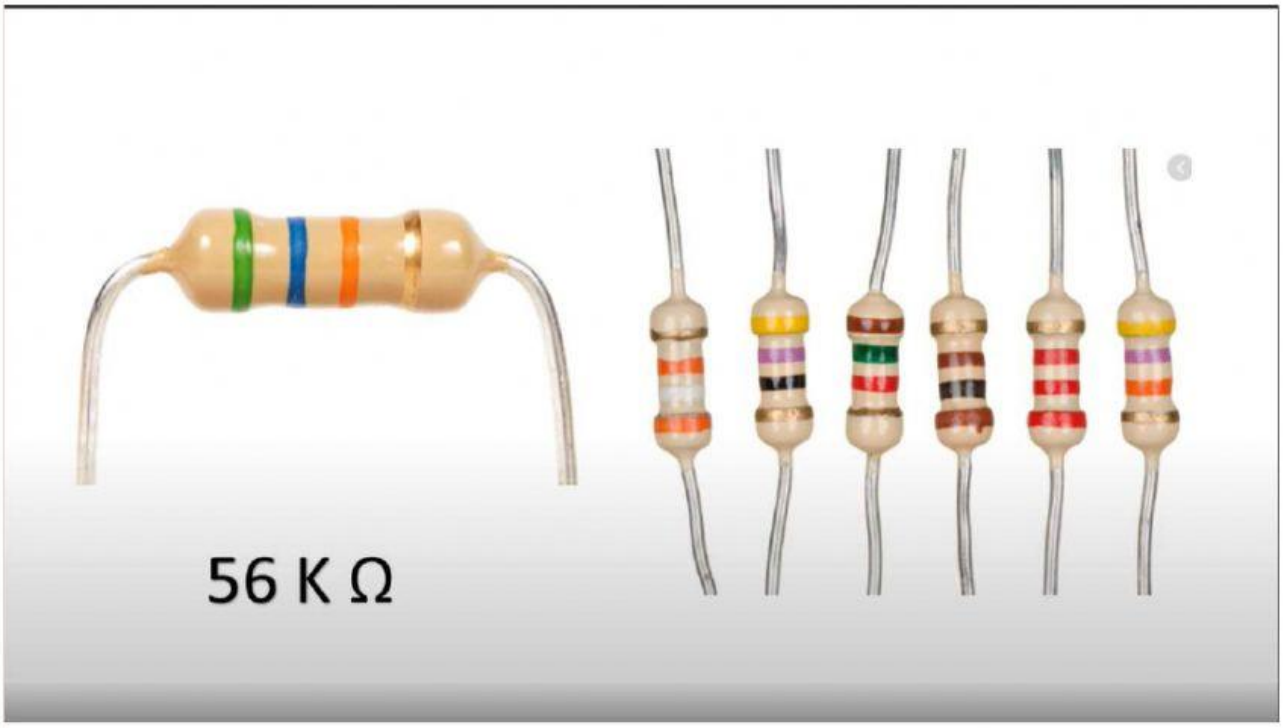
In the table below, select the color names for each number and drag and drop the corresponding color in front of them.

Number	Colour		Value to be multiplied by the third or fourth color band
0			$10^0 = 1$
1			$10^1 = 10$
2			$10^2 = 100$
3			$10^3 = 1000$
4			$10^4 = 10000$
5			$10^5 = 100000$
6			$10^6 = 1000000$
7			$10^7 = 10000000$
8			$10^8 = 100000000$
9			$10^9 = 1000000000$
-1			$10^{-1} = 0.1$
-2			$10^{-2} = 0.01$

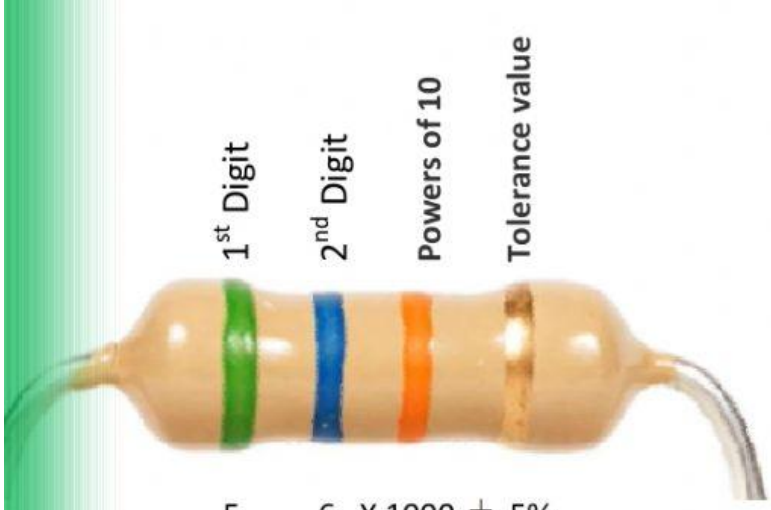
In the table below, select the color names to resistor tolerance

Color					No fourth color band
Tolerance value	± 1%	± 2%	± 5%	± 10%	± 20%

Let us calculate the resistance according to the color code.



For example:-



5 6 X 1000 ± 5%

Value of resistor = $56000 \pm 56000 \times \frac{5}{100}$

$= 56000 \pm 2800\ \Omega$

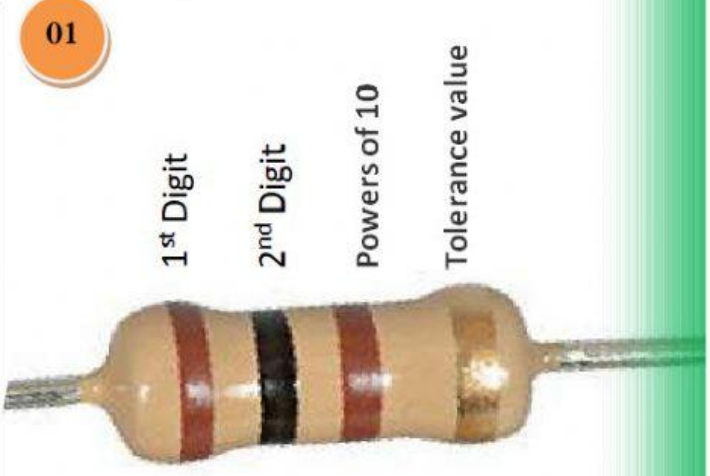
$= (56000 + 2800)\Omega - (56000 - 2800)\Omega$

Range of the true value of resistor $= 58800\ \Omega$ -- $53200\ \Omega$

$= 58.8\ k\Omega$ -- $53.2\ k\Omega$

Fill in the blanks according to the example

01



X ±

Value of resistor = ± X $\frac{}{100}$

= ±

Range of the true value of resistor = (+)Ω - (-)Ω

= Ω -- Ω

02

Value of resistor = X ± X ± / 100

= ±

Range of the true value of resistor = (+)Ω - (-)Ω

= Ω -- Ω

03

Value of resistor = X ± X ± / 100

= ±

Range of the true value of resistor = (+)Ω - (-)Ω

= Ω -- Ω

04

Value of resistor = X ± X ± / 100

= ±

Range of the true value of resistor = (+)Ω - (-)Ω

= Ω -- Ω

= kΩ -- kΩ

05

Value of resistor = X ± X ± / 100

= ±

= Ω - Ω

Range of the true value of resistor = kΩ - kΩ

= MΩ - kΩ

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