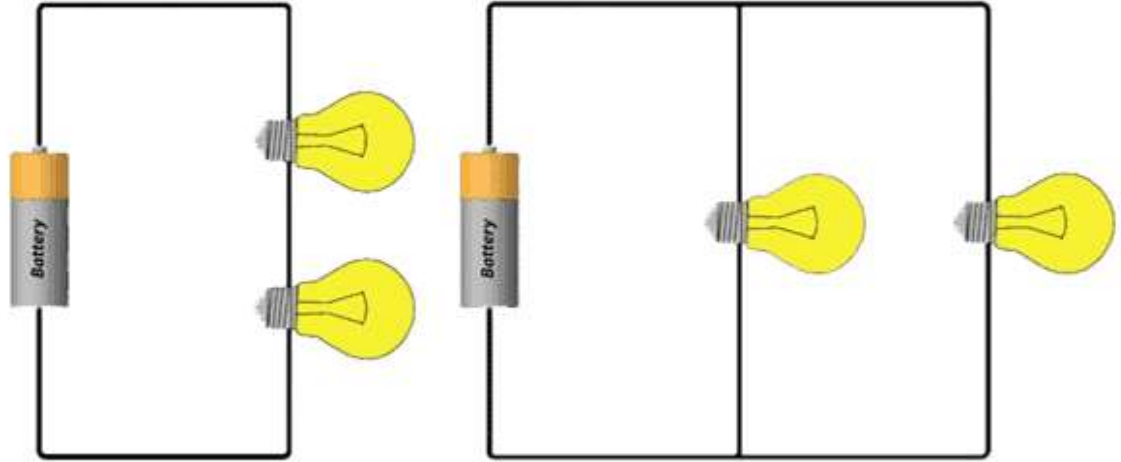


# Unit 1 Slides

# Warm Up

1. Compare and contrast the two circuits.
2. Do you predict the two light bulbs will be the same brightness compared to the other circuit?

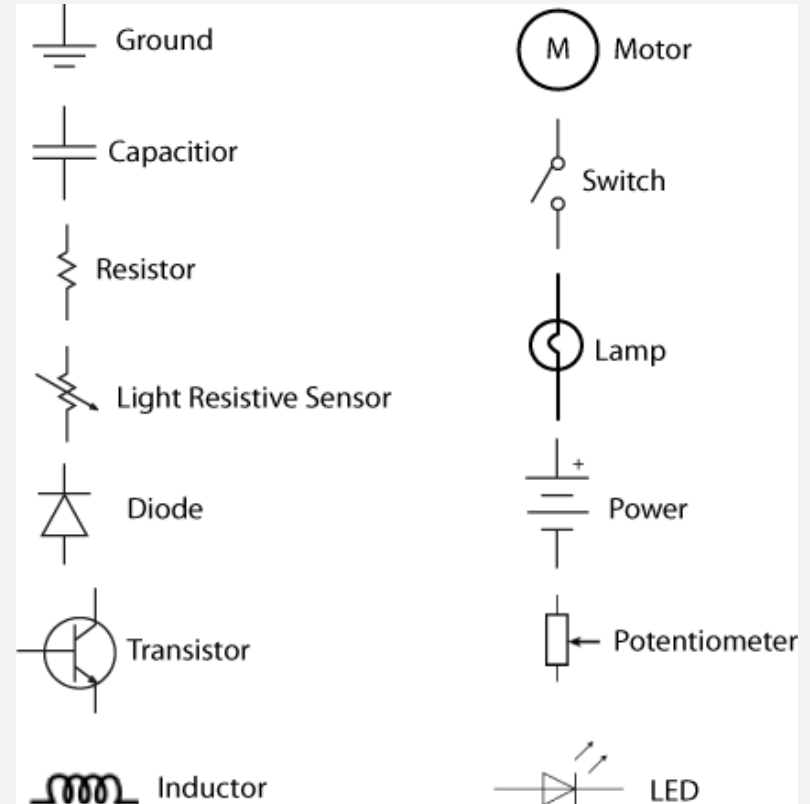


## To Review Today...

- **Syllabus**
- **Course Expectations**
- **Grading**

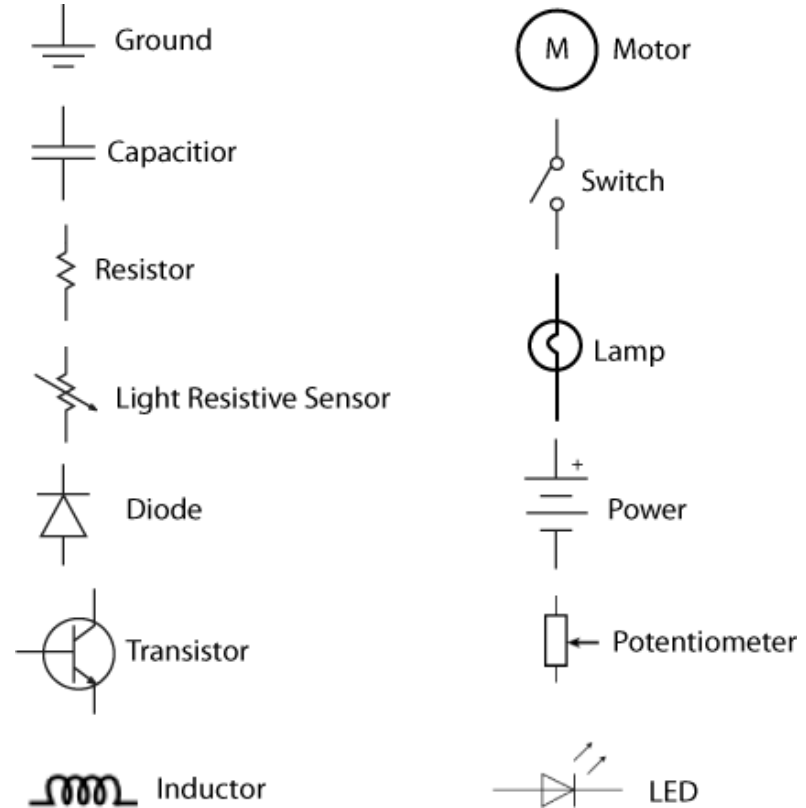
# Warm Up

1. Draw a circuit that has two lights and a battery
2. Draw a circuit that has two lights and a switch. The switch turns off the batteries at the same time.
3. Draw a circuit with two resistors.



# Drawing Circuits

- 1) Always straight lines
- 2) No Labels
- 3) Box-shaped
- 4) Always has a battery
- 5) Replace parts of the circuit with symbols
- 6) Just try it!



# Today in Class

- **Complete Day 1 circuits and the compare and contrast slides**
- **Show me**
- **Move on to Day 2**
- **You will be turning in your Day 2 compare and contrast. You will also get an in class observation for data collection (Investigation).**

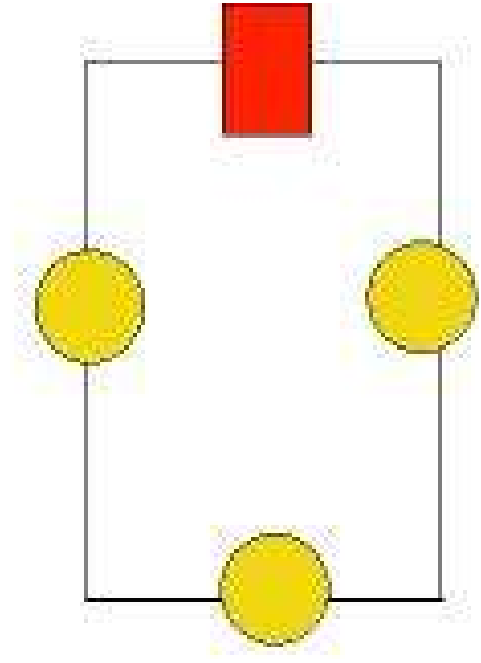
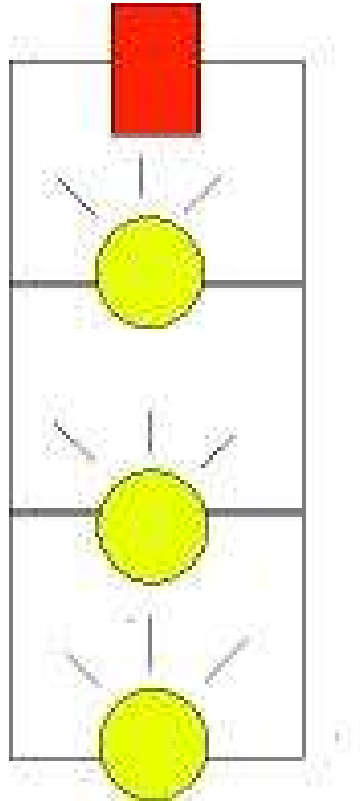
## Notes

- **Add compare and contrast to google classroom**
- **In class observation data collection (investigation)**
- **Edit the final idea- picture with whiteboard**

## Warm Up Physics

1. What do you expect will be different about the light bulb brightness between the first and second circuit?
2. Why do you think that is happening?
3. Which one do you think is called parallel and series? Why?

**CHARGE YOUR  
CHROMEBOOKS FOR NWEA  
NOW!**





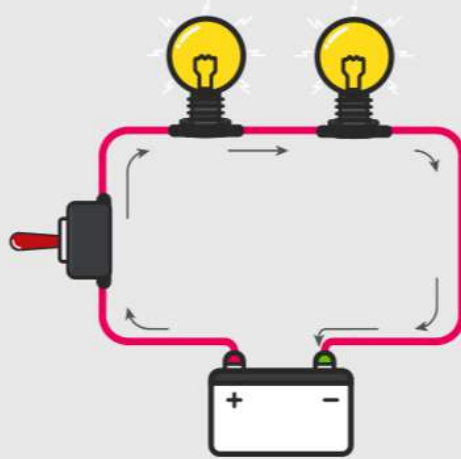
## Wednesday Goals

- Complete Compare and Contrast Day 1 on Google Classroom
- Complete Circuit Exploration Day 2 Circuits
- Complete Compare and Contrast Day 2 on Google Classroom
- If you finish both, read about the Circuit Challenge and begin to plan your “town” in your notebook.

Look at your  
circuits...  
which ones  
are series,  
parallel or  
both?

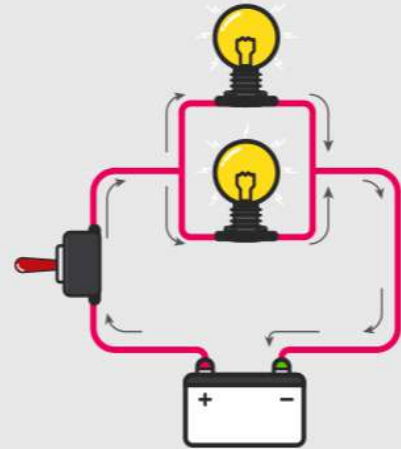
## DIFFERENCE BETWEEN SERIES AND PARALLEL CIRCUITS

BYJU'S  
The Learning App



### SERIES CIRCUITS

A series circuit is made by connecting the end of one device to the beginning of another.

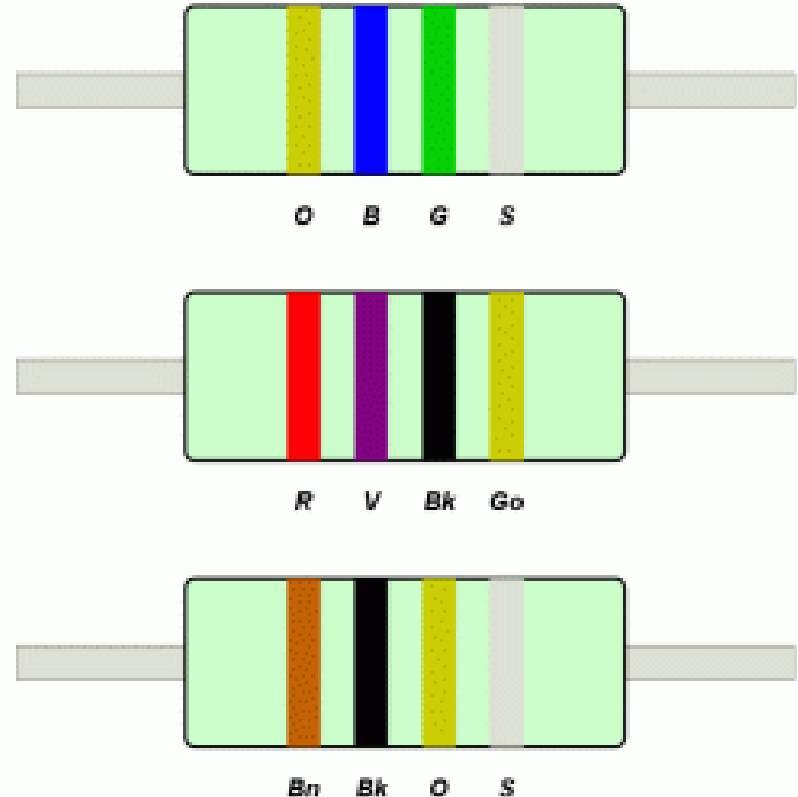


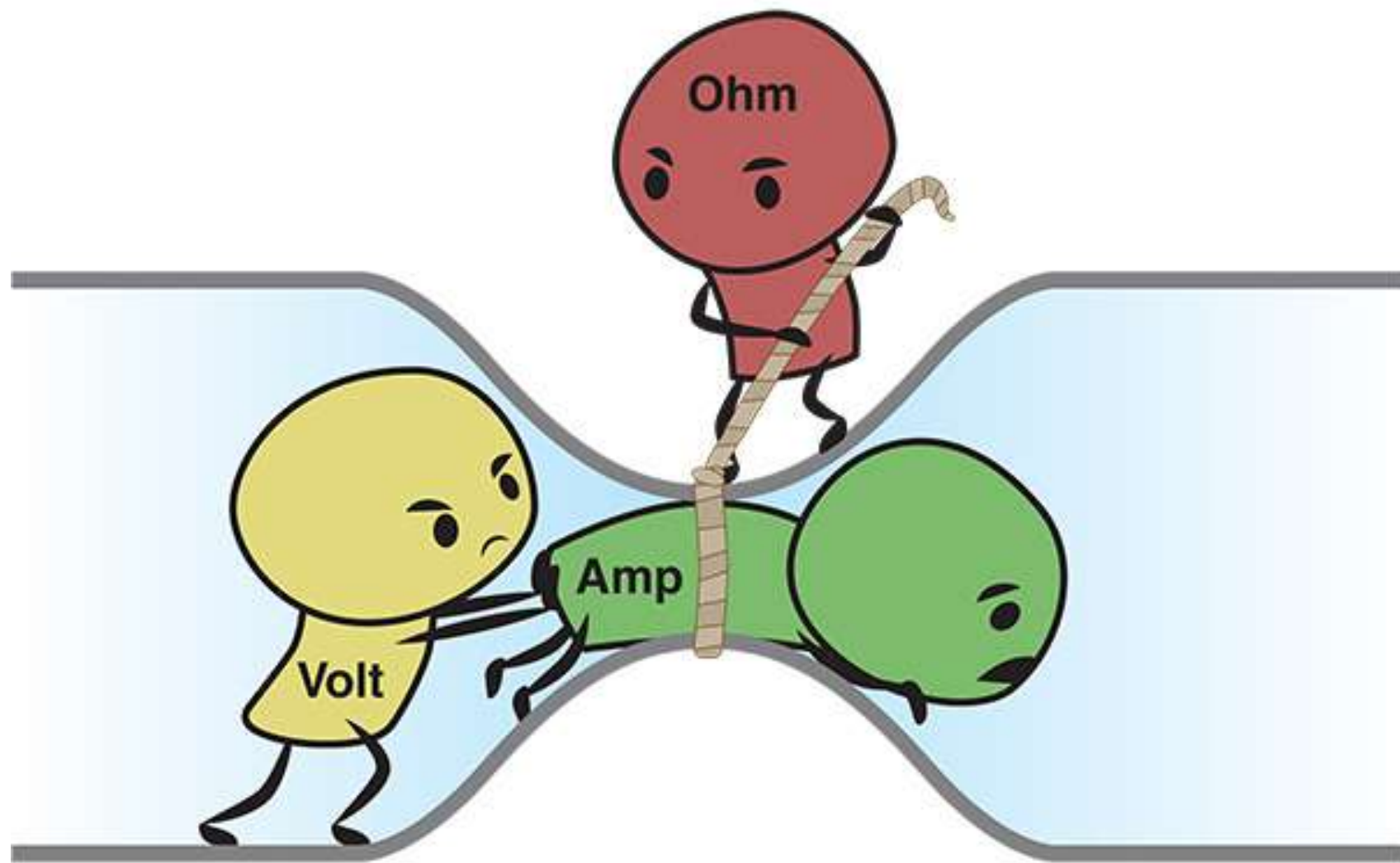
### PARALLEL CIRCUITS

In parallel circuits, the same terminals of both devices are connected together.

# Warm Up Physics

What do you think a resistor does? What do these colors mean?





# OHM'S LAW ANALOGIES



Electrons



Resistance to  
Movement



Voltage or  
"Reason for  
electrons to  
Move"

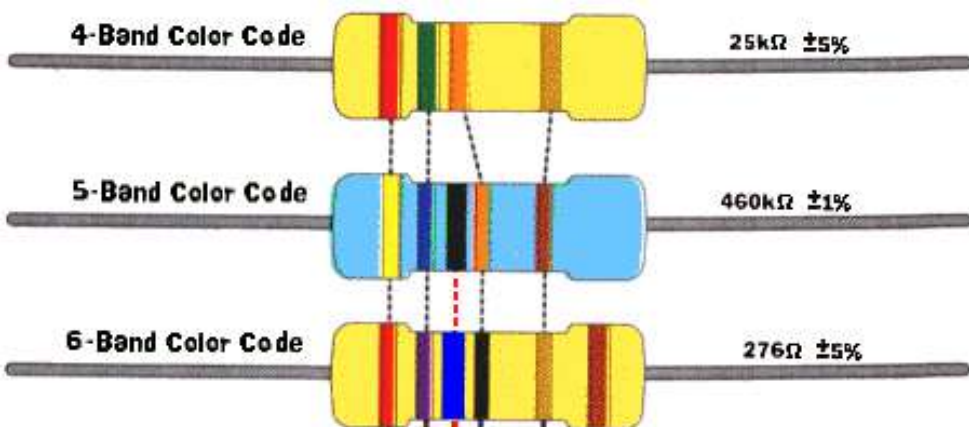


Amperage: The  
number of mice per  
unit of time that make  
it to the cheese

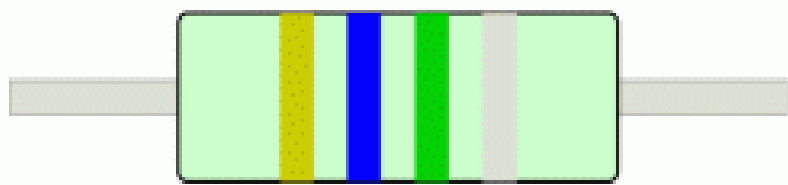
# What's a resistor?

Slow down the flow of  
electrons.

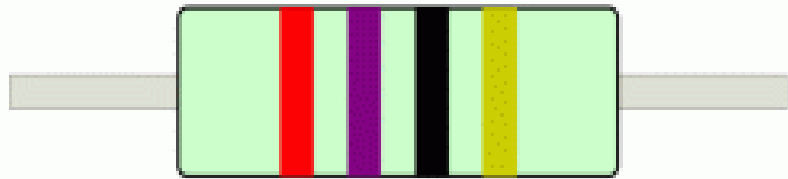
Strength?



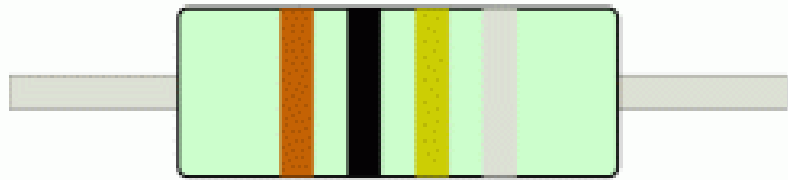
1st Digit	2nd Digit	3rd Digit	Multiplier	Tolerance	Temperature Coefficient
0	0	0	0.01 Silver	$\pm$ 10% Silver	
1	1	1	0.1 Gold	$\pm$ 5% Gold	
2	2	2	1	$\pm$ 1%	100ppm
3	3	3	10	$\pm$ 2%	50ppm
4	4	4	100		15ppm
5	5	5	1k		25ppm
6	6	6	10k	$\pm$ 0.5%	
7	7	7	100k	$\pm$ 0.25%	
8	8	8	1M	$\pm$ 0.1%	
9	9	9	10M		



O B G S



R V Bk Go



Bn Bk O S

# Thursday Goals

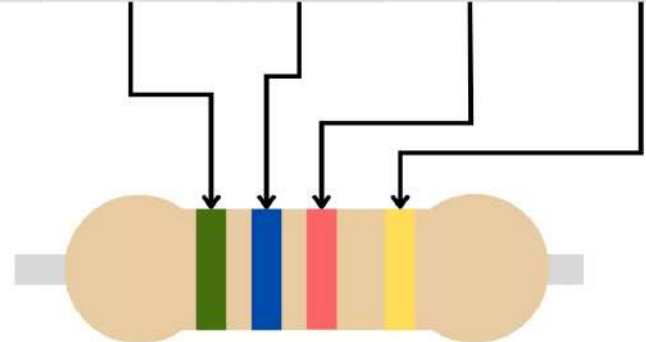
- Complete Compare and Contrast Day 1 on Google Classroom (past due)
- Complete Circuit Exploration Day 2 Circuits
- Complete Compare and Contrast Day 2 on Google Classroom (due today)
- Circuit Challenge! Due Friday End of Class
- If you finish all of that, work on the resistor color codes on Google Classroom!



# Warm Up Physics

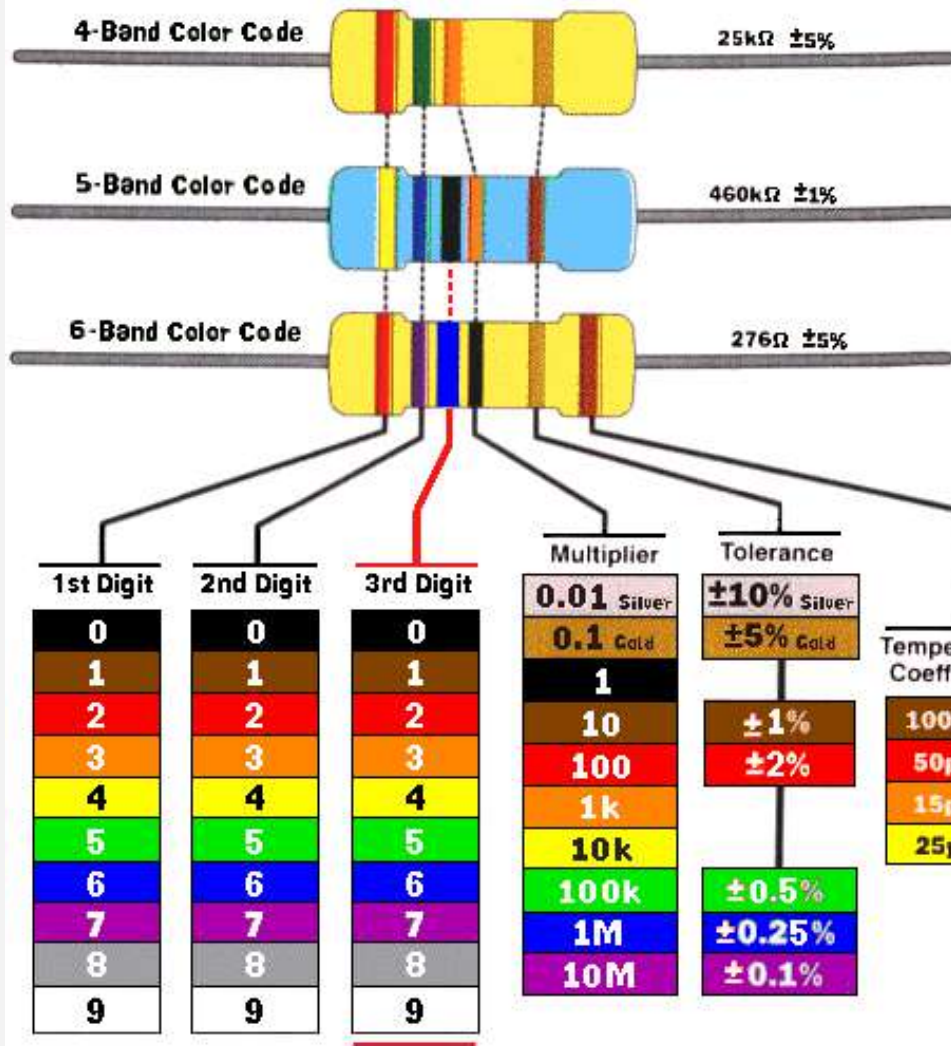
1. For the resistor on the right, what is the resistance (using the chart)?
2. What are the colors if resistor is  $700\ \Omega$  and  $\pm 5\%$ ?

Color	Band 1	Band 2	Band 3	Band 4
Black	0	0	$\times 1\ \Omega$	-
Brown	1	1	$\times 10\ \Omega$	-
Red	2	2	$\times 100\ \Omega$	-
Orange	3	3	$\times 1\text{K}\ \Omega$	-
Yellow	4	4	$\times 10\text{K}\ \Omega$	-
Green	5	5	$\times 100\text{K}\ \Omega$	-
Blue	6	6	$\times 1\text{M}\ \Omega$	-
Violet	7	7	$\times 10\text{M}\ \Omega$	-
Grey	8	8	-	-
White	9	9	-	-
Gold	-	-	-	$\pm 5\%$
Silver	-	-	-	$\pm 10\%$



# Friday Goals

- Go onto Google Classroom and make sure you have turned in boy Day 1 and Day 2 Compare and Contract Assignments
- Circuit Challenge! Due Friday End of Class
- If you finish all of that, work on the resistor color codes on Google Classroom!



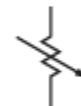
Ground



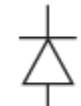
Capacitor



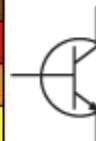
Resistor



Light Resistor



Diode



Transistor



Inductor



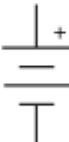
Motor



Switch



Lamp



Power

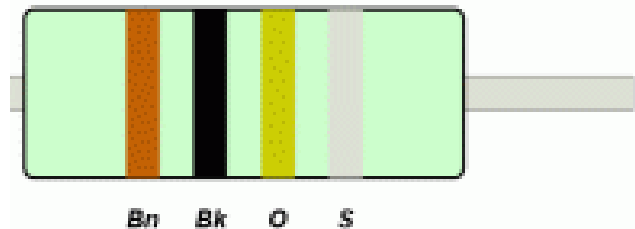
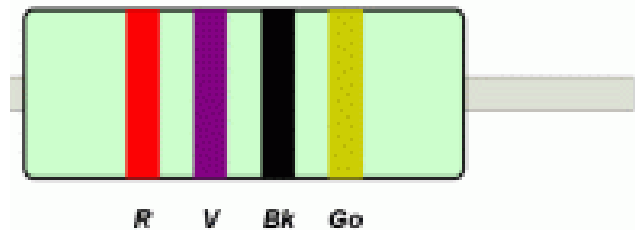
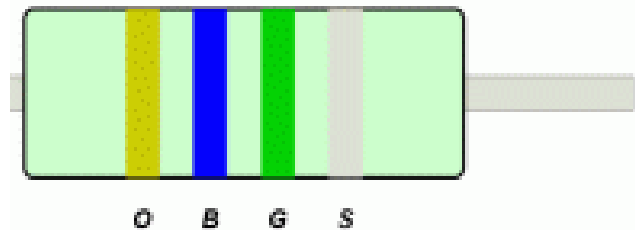
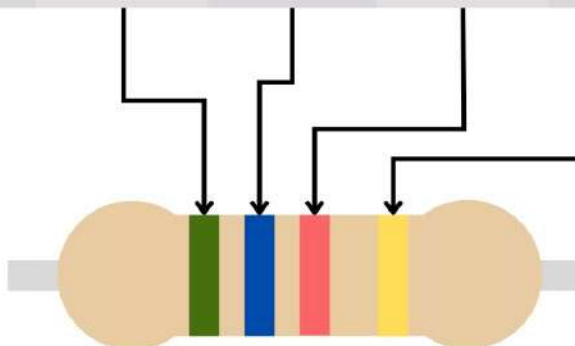


Potentiometer



LED

Color	Band 1	Band 2	Band 3	Band 4
Black	0	0	$\times 1\Omega$	-
Brown	1	1	$\times 10\Omega$	-
Red	2	2	$\times 100\Omega$	-
Orange	3	3	$\times 1K\Omega$	-
Yellow	4	4	$\times 10K\Omega$	-
Green	5	5	$\times 100K\Omega$	-
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Violet	7	7	$\times 10M\Omega$	-
Grey	8	8	-	-
White	9	9	-	-
Gold	-	-	-	$\pm 5\%$
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