

Engineering Notebook

Mechatronics Engineering 2023-2024

<Jonah Nolasco>

<j.nolasco@my.metroed.net>

<LinkedIn - Optional>

<Add a Picture or Meme that represents you>



Instructions:

For each day that you enter data into your Engineering Notebook, Copy this template text and table for each project entry. The difference between a Physical Engineering Notebook and this Notebook will be that your most current entry (i.e. Your newest entry) will be at the "top" like a blog... Check [here for a Rubric](#)

Sometimes you will see a comment from your teacher. Please read, and if it's a question, answer it.

Comment or Question from Mr. Burnham:

<copy text between these lines>

<Date> <Title - Daily/Weekly "Blog" Project Title - compelling, descriptive title>

Write a short paragraph of today's Project Goals...25 words

Planned Task List:

- List each
- Task you are trying
- To accomplish today

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

What Did I Working On Today (Labs, Robot Club, Other Projects):

Describe the steps/challenges you are working on. Make sure you describe how you set up the experiment, how you executed it, and all the materials you needed to do it. Spend time writing your "reflections". Sometimes more important than the actual results, are your thoughts on "why" and "how". Here is where you accurately describe both the success and failures.

If you make mistakes in the data collected, document the mistake and highlight it with a comment, so you don't lose the work. Don't just delete it. Where did you get stuck? A detailed description of issues you got stuck on or did not understand.

Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?

- (fill this out at the end of class/open lab activity time)
- List your next 2-5 steps or activities.
- This is key!!!
- You need to be thinking about this project as a whole, and break it down into
- small tasks you can complete in 30-60 min

<copy text between these lines>



08-16-23

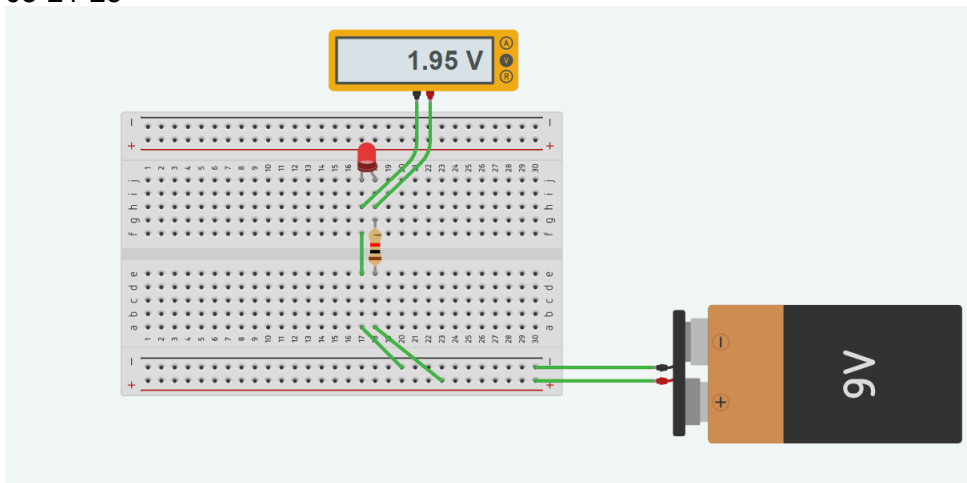
Ohm's law

 $R=V/I$ $I=V/R$ $V=I \cdot R$

08-18-23

Resistor #	Resistor Value (from color code)	Measured Ω	Measured Volts	Measured I	Calculated I
Resistor #1	220 Ω	216.5 Ω	5.77v	17.36mA	0.0266512702
Resistor #2	220 Ω	218.4 Ω	5.78v	17.29mA	0.02646520146
Resistor #3	330 Ω	329.4 Ω	5.76v	17.20mA	0.01748633879
Resistor #4	2000 Ω	1.985k Ω	5.97v	2.99mA	0.00300755667

08-21-23



08-22-23

8-29-23

Circuit	Measured R1	Measured R2	Measured RT	Calc R1+R2	Measured Vt	Measured V1	Measured V2	Calc Current	Measured Current
1	509 ohms	1.292 kohms	1.807 kohms	1.801 kohms	5.14v	1.45v	3.68v	2.848	2.229 mA
2	218.6 ohms	216.8 ohms	433 ohms	435.4 ohms	5.13v	2.580v	2.557v	11.79 mA	11.61mA
3	327.1 ohms	327.8 ohms	652 ohms	654.9 ohms	5.13v	2.567v	2.571v	78.47 mA	7.74mA
4	1.984 kohms	327.6 ohms	2.309 kohms	2.311 kohms	5.12v	4.40v	0.724v		

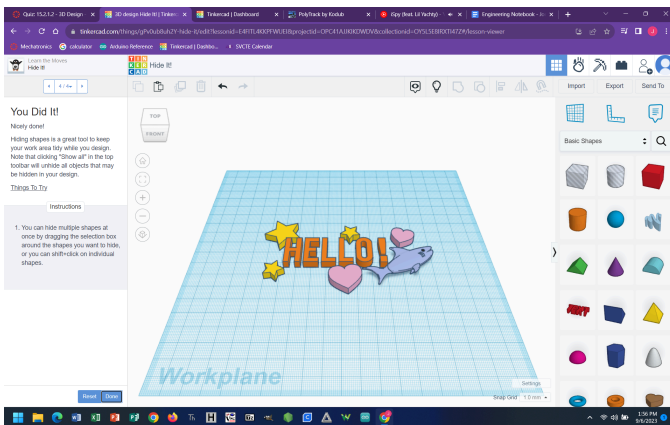
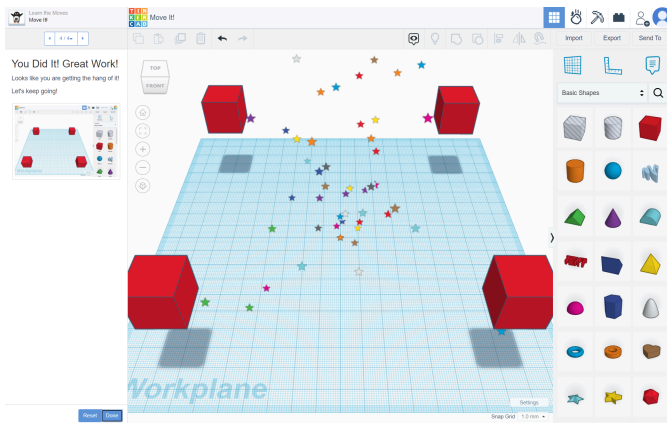
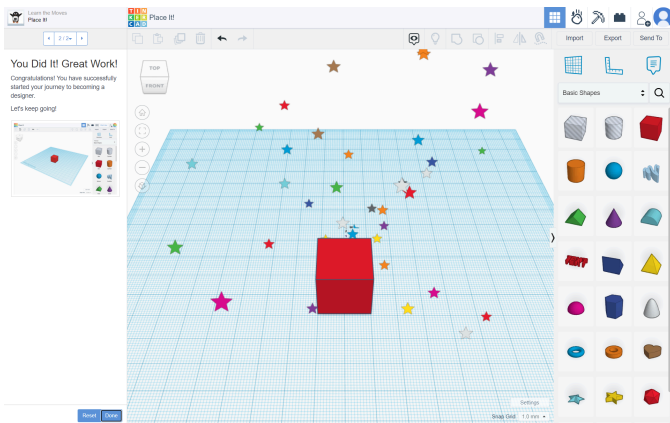
8-30-23

I read about the history of the speed of light and how this guy Sergei Avdeyev who held the record of most time spent in space, he was there for a total of 748 days on the Russian space station. He was also moving relative to earth; he is technically 0.02 seconds younger than he would have been had he never traveled in space.

09-06-23

Today I read HAWKING and I learned that Einstein didn't like that the universe isn't constant and he also didn't like quantum physics much either.





09-08-23

Circuit	R1	R2	Calc R_1+R_2	Given V_T	Calculated I_T	Calculated V_1	Calculated V_2
1	330 Ω	680 Ω	1010 Ω	5v	4.95mA	1.6335v	3.366v
2	1k Ω	2k Ω	3k Ω	5v	1.66mA	1.66v	3.32v
3	680 Ω	1k Ω	1.68k Ω	5v	2.97mA	2.01v	2.97v
4	Ω	Ω	Ω	v		v	v

09-11-23

Circuit	Measured R1	Measured R2	Calc R1+R2	Measured Vt	Measured V1	Picked V2	Measured Current
1	620Ω	390Ω	1.01KΩ	5v	3.1v	1.95v	5mA

Adjustable wrench

- Adjustable wrench



-
- Long handle with only two moving parts
- Description and tips on how to use the tool (This could be a step by step "How To Use" guide)
 - Step 1: adjust the wrench to desired gap
 - Step 2: Fit the wrench onto desired object and turn clockwise or counter clockwise
- Links to description of any safety issues and procedures
 - https://www.ccohs.ca/oshanswers/safety_haz/hand_tools/wrenches.html
- Links to 2 online resources - Tutorial sites, vendor instruction site, and/or YouTube/TikTok
 - [Correct Way to use an Adjustable Jaw Wrench](#)
 - [Best Wrench \(ADJUSTABLE\)? Craftsman USA vs Craftsman, Crescent, Kobalt, Milwaukee, Chan...](#)

09-12-23

Circuit	Measured V1	Measured V2	Measured Vt	Calculated R1	Calculated R2
1	4.79v		5.00v		
2	3.85v		5.00v		
3	2.87v		5.00v		



4	1.556v		5.00v		
---	--------	--	-------	--	--

09-13-23

Circuit	Derived V1	Pick V2	Measured Vt	Calculated R2	Measured R2
1			5.17v		
2					
3					
4					

09-15-23

Test	Brightness	Selected R_2	Measured V_2	Measured V_T	Derived V_p	Calculated I	Calculated R_p
1	Covered	1k Ω	0.07mv	4.82v			Ω
2	Some Light	1k Ω					
3	Room	1k Ω	1.654v	5.18v			
4	Brighter	1k Ω					
5	Full Bright	1k Ω					

09-25-23

int x = 0;

void setup()

```
{
  Serial.begin(9600);
}
```



```
void loop()
{
  for (int x = 0; x < 20; x++) {
    Serial.println(x);
    delay(300);
    if (x==10) {
      Serial.println("The loop is equal to 10");
      delay(300);
    }
    else if (x>10) {
      Serial.println("The loop is greater then 10");
      delay(300);
    }
    else {
      Serial.println("The loop is less then 10");
      delay(300);
    }
  }
}
```



<copy text between these lines>

<Date> <Title - Daily/Weekly "Blog" Project Title - compelling, descriptive title>

Write a short paragraph of today's Project Goals...25 words

Planned Task List:

- List each
- Task you are trying
- To accomplish today

Useful Reference Links:

- List any links related to today's work
-

Today's Class Notes: <enter class lecture notes here>

What Did I Working On Today (Labs, Robot Club, Other Projects):

Describe the steps/challenges you are working on. Make sure you describe how you set up the experiment, how you executed it, and all the materials you needed to do it. Spend time writing your "reflections". Sometimes more important than the actual results, are your thoughts on "why" and "how". Here is where you accurately describe both the success and failures.

If you make mistakes in the data collected, document the mistake and highlight it with a comment, so you don't lose the work. Don't just delete it. Where did you get stuck? A detailed description of issues you got stuck on or did not understand.

Include pictures, Code or links to Code, and links to reference material.

What Will I Work On Next Time?

- (fill this out at the end of class/open lab activity time)
- List your next 2-5 steps or activities.
- This is key!!!
- You need to be thinking about this project as a whole, and break it down into
- small tasks you can complete in 30-60 min

<copy text between these lines>

