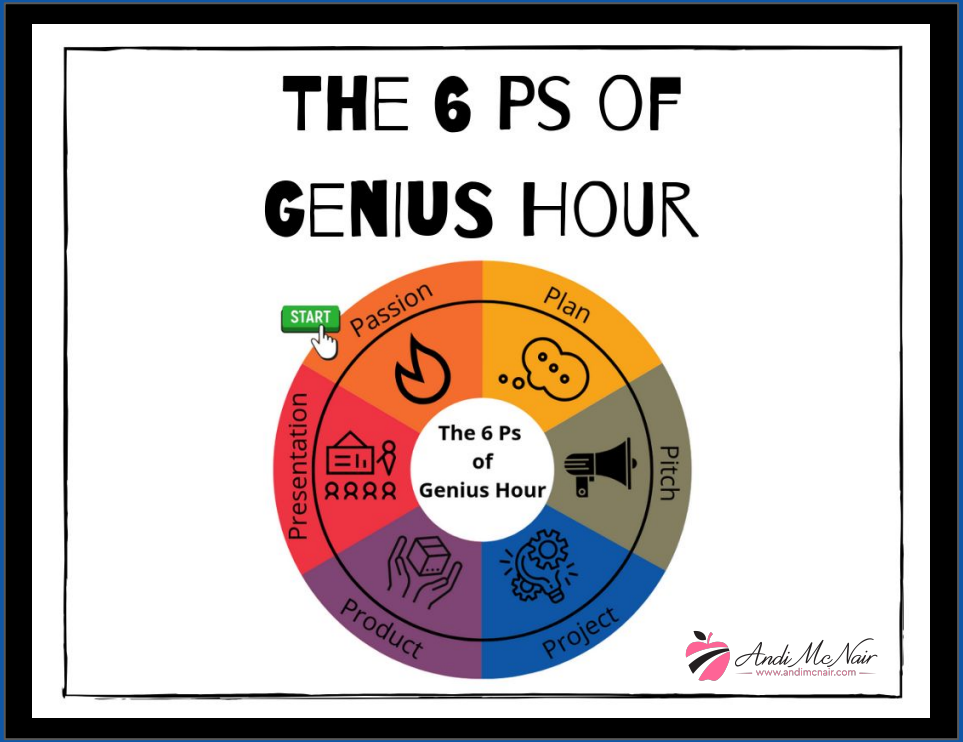
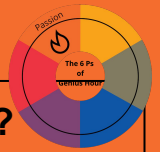
6 Ps of Genius Hour



Passion

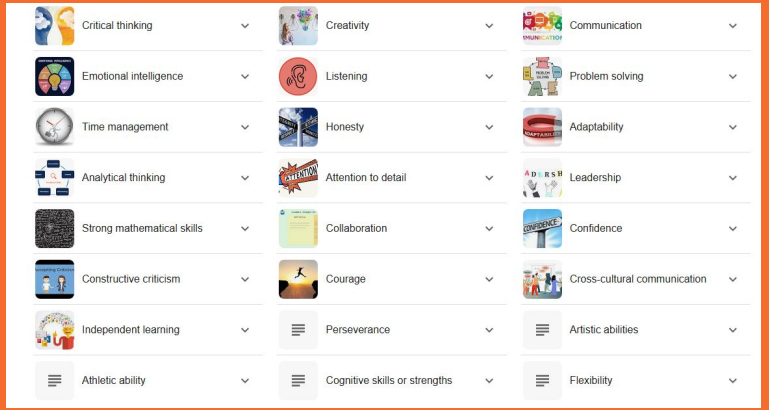


What type of science/engineering:
https://www.sciencebuddies.org/
Must relate to sound, light or electromagnetic waves

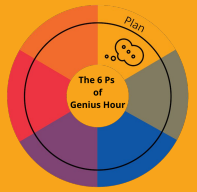
What are my academic strengths?
Stem related things (Science Technology Engineering Math)

What I Love… I love how electromagnetic waves have an electromagnetic field moving at the speed of light while not being visible to the human eye.

What Bothers Me… Something that bothers me with electromagnetic waves is that they only work through some kind of vacuum seal, and have to charge up particles rather than working immediately.

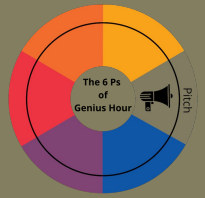


Plan



How much time will my project take? (no more than 2 weeks)	What materials do I need for my project?	Who will my outside expert be for my project?
About 3 weeks	Strong magnets welder/soldering iron Some sort of metal Thermal camera	Harakal Minson Todd loving

Pitch - KWH



K - What do I KNOW (Which bucket did you choose?etc.)	W - What do I WANT to Know (EQ)	H - HOW will I find out
I know that electromagnetic waves travel at the speed of light having a chemical charge, and that they carry energy and momentum through space without needing a medium. I chose electromagnetic waves	I want to know if electromagnetic waves can move faster than the speed of light if accelerated enough.	I will find this by testing different hypothesis until i come up with a final idea if the electromagnetic wave can over the speed of light.

SMART GOALS

Name:

S	Your goal must be **specific**. What exactly are you going to achieve?	My goal is to be able to determine whether an elkectromagnetic wave can go over the speed of light, and see how well you can see it using thermal vision.
M	Your goal must be **measurable**. How will you measure your progress?	I will track the progress I make towards my goal by Writing in a separate google slide/doccument to record my progress
A	Your goal must be **attainable**. Do you have the skills and abilities necessary to achieve your goal?	My goal is attainable because I can Work mechanically and engineer what i need to engineer with little to some help
R	Your goal must be **relevant**. Why is achieving your goal important to you? How is it meaningful?	Achieving this goal is important and meaningful to me because If i achieve my goal i will hopefully have my project presented at the SARSEF science fair
T	Your goal must be **timely**. How much time do you have to achieve your goal?	My goal will be achieved by Testing multiple hypothesis's to test and se if electromagnetic are visible and if they go past the speed of light

STEPS TO REACH MY GOAL:

1. Research this topic
2. Come up with hypothesis's
3. Gain materials
4. Achive the goal

©LITERACY IN FOCUS

TUESDAY

Date: 2/3/16h

PLAN TO DO TODAY	Research how electromagnetic waves travel
ACTUALLY DID TODAY	Learned how electromagnetic waves travel and how they work and what they are

"Electricity can be static, like the energy that can make your hair stand on end. Magnetism can also be static, as it is in a refrigerator magnet. A changing magnetic field will induce a changing electric field and vice-versa—the two are linked. These changing fields form electromagnetic waves. Electromagnetic waves differ from mechanical waves in that they do not require a medium to propagate. This means that electromagnetic waves can travel not only through air and solid materials, but also through the vacuumof space. In the 1860's and 1870's, a Scottish scientist named James Clerk Maxwell developed a scientific theory to explain electromagnetic waves. He noticed that electrical fields and magnetic fields can couple together to form electromagnetic waves. He summarized this relationship between electricity and magnetism into what are now referred to as "Maxwell's Equations" (NASA 3+4).

ONE THING I DID WELL TODAY IS

Researching the work i said id study

ONE THING I WILL DO BETTER TOMORROW

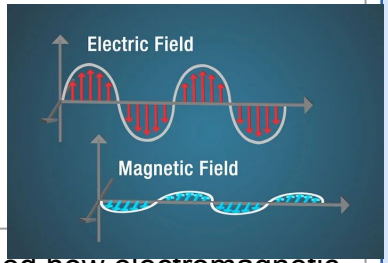
Staying on task, and researching more than i need to if i finish

THRUSDAY

Date:

Plan To Do Today

Learn how electromagnetic waves are formed, and what happens after they disappear.



Actually Did Today

I researched how electromagnetic waves form and what they are (a form of static electricity formed by some sort of magnetism).

NOTES

Notes: Electricity can be static, like the energy that can make your hair stand on end. Magnetism can also be static, as it is in a refrigerator magnet. A changing magnetic field will induce a changing electric field and vice-versa—the two are linked. These changing fields form electromagnetic waves. Electromagnetic waves differ from mechanical waves in that they do not require a medium to propagate. This means that electromagnetic waves can travel not only through air and solid materials, but also through the vacuum of space. In the 1860's and 1870's, a Scottish scientist named James Clerk Maxwell developed a scientific theory to explain electromagnetic waves. He noticed that electrical fields and magnetic fields can couple together to form electromagnetic waves. He summarized this relationship between electricity and magnetism into what are now referred to as "Maxwell's Equations. First, he had demonstrated in the concrete, what Maxwell had only theorized — that the velocity of radio waves was equal to the velocity of light! This proved that radio waves were a form of light! Second, Hertz found out how to make the electric and magnetic fields detach themselves from wires and go free as Maxwell's waves — electromagnetic waves" (NASA, 3,4,5)

One thing I did well today is

Staying on task with researching

One thing I will do better tomorrow

Work on researching right away

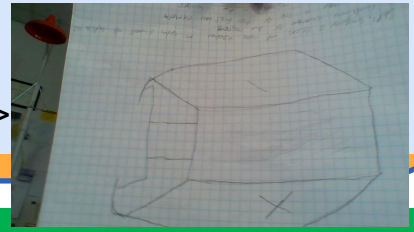
Date: Friday

Plan To do Today	Make a blueprint & list the steps for the product
Actually did Today	Made a blueprint

NOTES

Notes
Step 1. Soughter 1 piece of metal to the base on each side and have a second to act like a visor
Step 2. Make a spot for the camera to go
Step 3. Put the magnets n the chambers from step 1
Step 4. Remove the ‘visor’ piece of metal and put the camera in the slot
Step 5. Turn on the camera to see the electromagnetic field

[Blue print] ————————>



One thing I did well today is

Staying on task

One thing I will do better tomorrow

Couldve world better

WEDNESDAY Date:

PLAN TO DO TODAY

I plan to come up with a few questions i can test with my final product

Strong magnets
welder/saughtering iron
Some sort of metal
Thermal camera/app on phone

ACTUALLY DID TODAY

NOTES

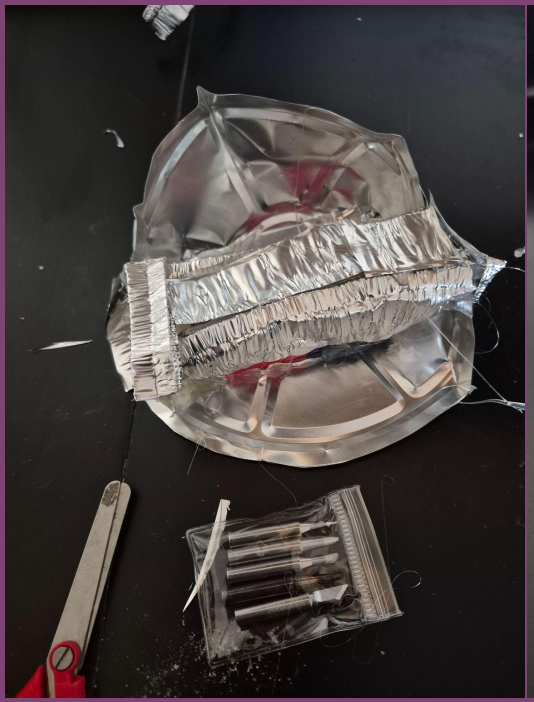
Notes

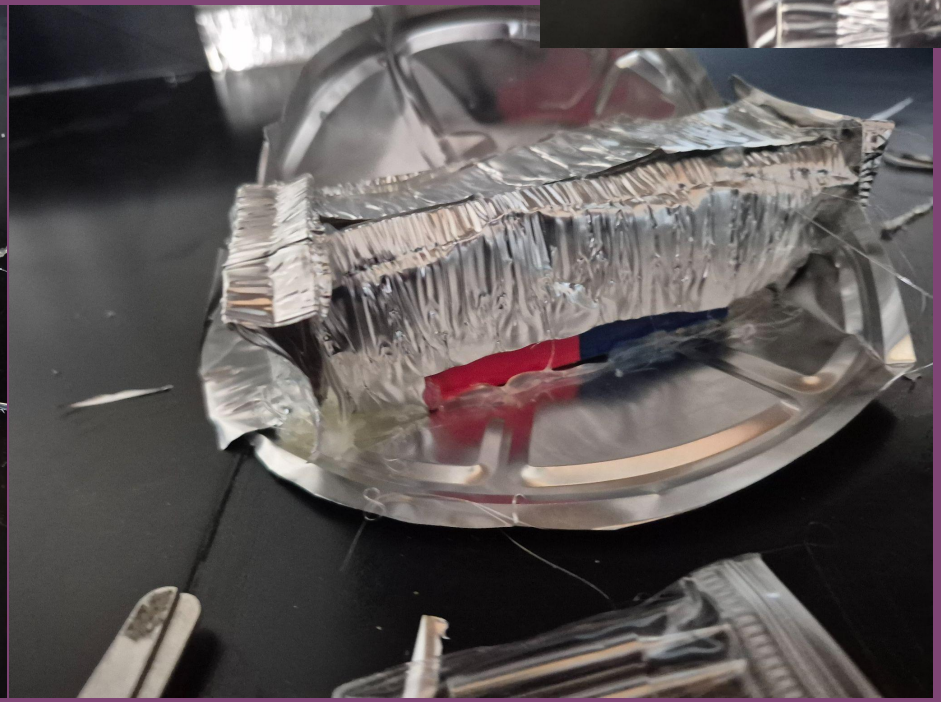
1. Is it possible to physically see a magnetic field?
2. How strong of a magnetic field does it take to last for a long amount of time?
3. Why are magnetic fields needed in everyday life?
4. How is a magnetic field constructed?
5. can you make a magnetic field out of literally magnets?
6. Why do magnetic fields occur?
7. What are magnetic fields most of the time used for aside from checking on the body?
8. Can magnetic fields have negative energy?
9. Can electromagnetic waves be activated when the particles are faster than 300,000,000 m/s?

ONE THING I DID WELL TODAY IS

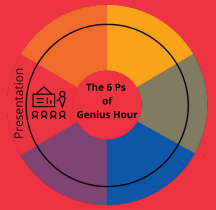
ONE THING I WILL DO BETTER TOMORROW

Product





Presentation - LAQ



L - What Did I LEARN	A - What ACTION Did I Take	Q - What QUESTIONS Do I Still Have
I leanred how electromagnetic waves work and what they are	An action i made is making a model to show how electromagnetic waves work.	One question i still have is what are electromagnetic fields are used for?