Physics Unit 1
Energy Flow

Physics
Tuesday, September 13

Agenda

- Attendance Questions
- New Buddies
- Warm Up
- Michigan Energy Exploration

Warm Up

Our first unit is Energy Flow and Earth's Systems. What does that mean to you? What might we be learning about?

Reminders

Is it Science CER Summative Past Due- TURN IN ASAP!

Partner Introductions

1. Name
2. Grade
3. Why you took this class
4. What are some positive attributes you bring to group work and collaborative work?

Unit 1: Energy Flow and Earth's Systems

Physics
Wednesday, September 14

Agenda

- Attendance Question
- Warm Up
- Michigan Energy Exploration Wrap Up

Warm Up

You will be getting a new table/group.
What was something you learned so far by looking at energy use in Michigan?

Reminders

Is it Science CER Summative Past Due- TURN IN ASAP!

Physics
Wednesday, September 14

Agenda

- Attendance Question
- Warm Up
- Michigan Energy Exploration Wrap Up

Warm Up

What was something you learned so far by looking at energy use in Michigan?

Reminders

Is it Science CER Summative Past Due- TURN IN ASAP!

Physics
Thursday, September 15

Agenda

- Attendance Questions
- Warm Up
- Lab Group Jobs
- Electricity Exploration

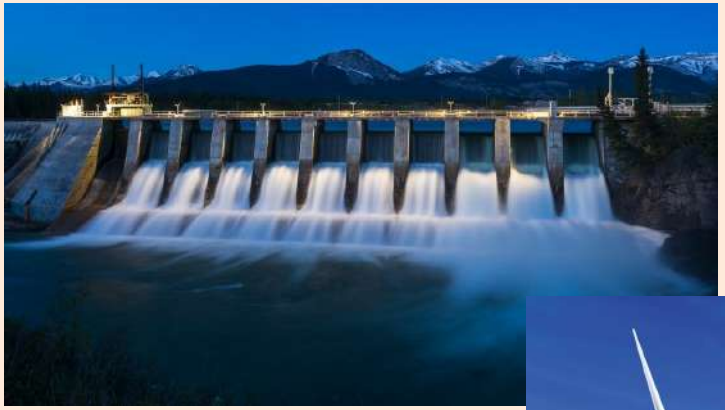
Warm Up

Take out your Energy in Michigan Exploration from yesterday.
Write down two new things you learned.

Reminders

Is it Science CER Summative Past Due- TURN IN ASAP!

How Does This...



Turn Into This?

Lab Group Jobs

Group Leader

Lead team to goals of the day, keeps group focused

Materials Manager

Keeps track of all materials

Scribe

Makes sure all students write down all information

Task Manager

Makes sure group is following task or directions

Lab Expectations

https://docs.google.com/presentation/d/1V5HO4IINRqSYDlPRYVryxf-cFXSYc3Dr8zGPzJ-T4xE/edit?usp=sharing

Observations and Inquiry

Look at competency rubrics

Physics
Friday, September 16

Agenda

- Attendance Questions
- Warm Up
- Electricity Exploration
- Debrief
- Choice Boards

Warm Up

Describe what we did in our labs so far yesterday. How do you think this relates to electricity?

Reminders

Is it Science
CER
Summative
Past Due- I'm grading today

Physics
Monday, September 19

Agenda

- Attendance Question
- Warm Up
- Electricity Exploration Debrief
- Choice Boards

Warm Up

Take out your labs from last week. What are some patterns you noticed?

Reminders

Electrostatics Assessments (in class) start Thursday

Physics
Tuesday, September 20

Agenda

- Attendance Question
- Warm Up
- Van de Graaff Demos
- Class Conclusions from the last 4 days!

Warm Up

Take out your notebook. What does it mean to make high quality observations?

Reminders

Electrostatics Assessments NEXT WEEK :)

Physics
Wednesday, September 21

Agenda

- Attendance Question
- Conclusions from the last 4 days!
- New Partners
- E&M Demos

Warm Up

Take out your notebook and observations from the last 4 days. Write down 3 trends you noticed.

Reminders

Electrostatics Assessments NEXT WEEK :)

Physics
Thursday, September 22

Agenda

- Attendance Question
- E&M Demos

Warm Up

Take out your notebook from yesterday!!!!

Reminders

Electrostatics Assessments NEXT WEEK :)

Physics
Friday, September 23

Agenda

- Attendance Question
- E&M Demos

Warm Up

Did you finish your observations from yesterday?

Reminders

Electrostatics Assessments NEXT WEEK :)

Model and describe the following situations you observed in class.

Neutral and Neutral

Charged and Neutral

Charged and Charged

Charged and Metal

Physics
Tuesday, September 27

Agenda

- Attendance Question
- E&M Demos Finish Up
- Class Conclusions
- Impact of Renewable Energy

Warm Up

Take out your E&M observations from last week.

Reminders

Electrostatics Assessments this week!

To Do Today

1. Review E&M observations - takeaways
2. Review and complete Impact of Renewable Energy

Physics
Wednesday, September 28

Agenda

- Attendance Question
- Partners
- Impact of Renewable Energy Conclusions
- Class Conclusions E&M

Warm Up

What is something that surprised you from the Impacts of Renewable Energy Exploration?

Reminders

Electrostatics Assessments Thursday and Friday!

https://scied.ucar.edu/interactive/simple-climate-model

E&M Demos BIG Conclusions

Modeling and make conclusions...

1. Magnet Interactions with other magnets
2. Magnet Interactions with other objects
3. Iron Filings Interactions (back of room)

Physics
Thursday, September 29

Agenda

- Attendance Question
- Electrostatics Assessment Part 1 (CER)

Warm Up

Sit where you did yesterday. Take out your observations from electrostatics!

Reminders

Electrostatics Assessments Thursday and Friday!

Physics Assessment

- Claim
  - Model what you think you will happen in the three situations
  - Situation #3 should say “blue balloon”
- Evidence
  - 3 separate pieces of evidence
  - Model from Electrostatics Demos and PhET
  - Do not write “Demo #1” or “PhET Lab”
- Reasoning
  - Explain the Evidence and tie it to the claim
- When done turn it in and grab a Part 2 to work on for tomorrow.

Physics
Friday, September 30

Agenda

- Attendance Question
- Turn in Part 1 (if needed)
- Electrostatics Assessment Part 2

Warm Up

Sit where you did yesterday.

Reminders

Electrostatics Assessments Thursday and Friday!

Physics
Monday, October 3

Agenda

- Attendance Question
- Lab Space
- Turn in Part 1 (if needed)
- Part 2 Finish and Review
- Energy Transformation KWL
- Project Intro

Warm Up

Sit in your assigned seat!

Reminders

Wind Turbine Groups: 1, 2 or 3 students by tomorrow

Expectations of using the lab space

Part 2

- Data Table
- Graph
- Conclusion
- Sources of Error

K W L

Driving Question: What do I know about wind turbines?

https://www.energy.gov/eere/wind/how-do-wind-turbines-work

Physics
Tuesday, October 4

Agenda

- Project Intro
- Choose groups
- Work on brainstorming questions with group

Warm Up

What variables can be changed when creating a wind turbine design?

Reminders

Bring in materials by tomorrow!

Project Intro

Leave everything in the room except computer, notebook and materials and head to the lab

Drop your bags off and head next door.

Variable 1: Number of Blades

- Iterations
  - 1: 3 blades- 0.3 V
  - 2: 4 blades- 0.4 V
  - 3: 5 blades: 0.3 V
- We kept the material (cardboard), shape/size/length and angle the same for each
- Since 3 blades and 5 blades produced the same voltage, we went with 3 blades it was easier to build.

Today's Goal

1. Finish Presentation- should be around 5 minutes and expect follow up questions at the end
2. Turn in presentation, iteration forms, daily logs and teacher meetings form on Google Classroom

Tuesday & Wednesday

1. Find a seat where you can focus
2. Turn in presentation, iteration forms, daily logs and teacher meetings form on Google Classroom
3. Reflect on the question: How can we be an active and engaged member of the audience for our peers?

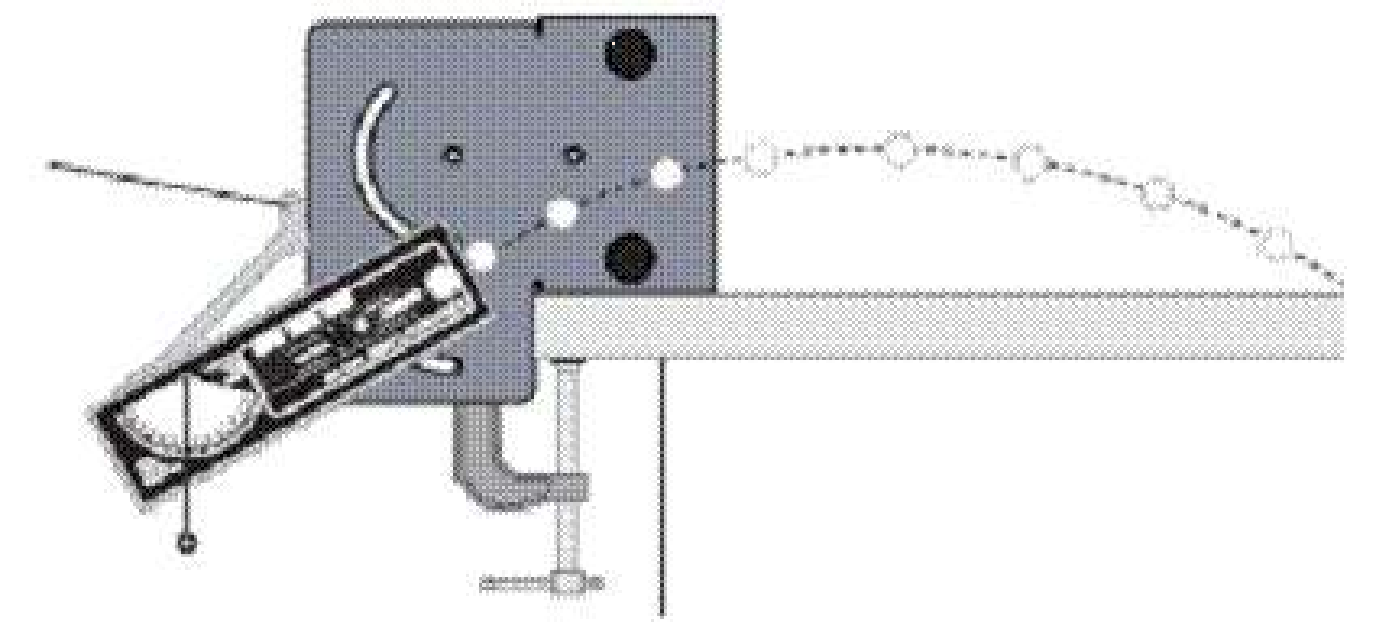
Reminder: Thursday is a half day Hours 1 and 2 ONLY.

Practice Block Schedule- What does it look like in person? How can it help us learn better?

Let’s talk about labs…

- What is a challenge when you do a lab in a science class over multiple days?
- How would the results and experience improve if you didn’t have to go over multiple days?

Which angle produces the longest range?



Which angle produces the longest range?

Materials: Launcher, Steel Ball, Carbon Paper, Meter Stick.

Testing angles 15-75 degrees moving up by 10 degrees. 2-3 trials per angle

- Before we start taking data:
  - Independent, Dependent and Control Variables
  - Create a diagram and procedure
  - Data table for the experiment

Which angle produces the longest range?

- Independent, Dependent and Control Variables
- Create a diagram and procedure (update this from doing your experiment- include measurements and tools)
- Data table for the experiment
- Graph distance (y axis) vs. angle (x axis)- scatter plot with trend line
- Conclusion to question referencing data and graph
- 5 sources of error and how they could have been prevented

Reflect on your experience

- How would this be different if we broke this up over multiple days?
- What challenges would we have?