

# Physics



## 2022-2023 Syllabus

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Room 1207

Website: [hhsdeleon.weebly.com](http://hhsdeleon.weebly.com)

General Office hours: 3:30 - 4:00 Monday - Friday

Parent Conferences: Monday-Thursday 3:30 -4:15

### Daily materials

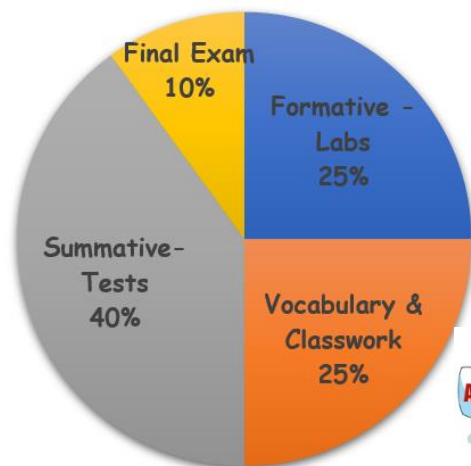
- Pencil
- Calculator
- Notebook Paper
- Folder or Binder

### Other helpful items:

- Colored pencils or pens
- Ruler
- Protractor



### Grades



### Overview of this physics class

Focuses on the interactions of physical objects and the concept of energy. Critical and higher-level thinking skills are encouraged in this course. Science is an experimental subject and hands-on learning is a must to get the most out of this class. The classroom is a place where students can safely think about and explore the world we live in. Every student's opinion is respected and valued but requires student accountability and open communication regarding behavior, work and grades.

Use the outline and all resources in CTLS or my webpage for a successful school year!

Scan for class website!  
Contains additional  
information for physics  
(organized by unit)



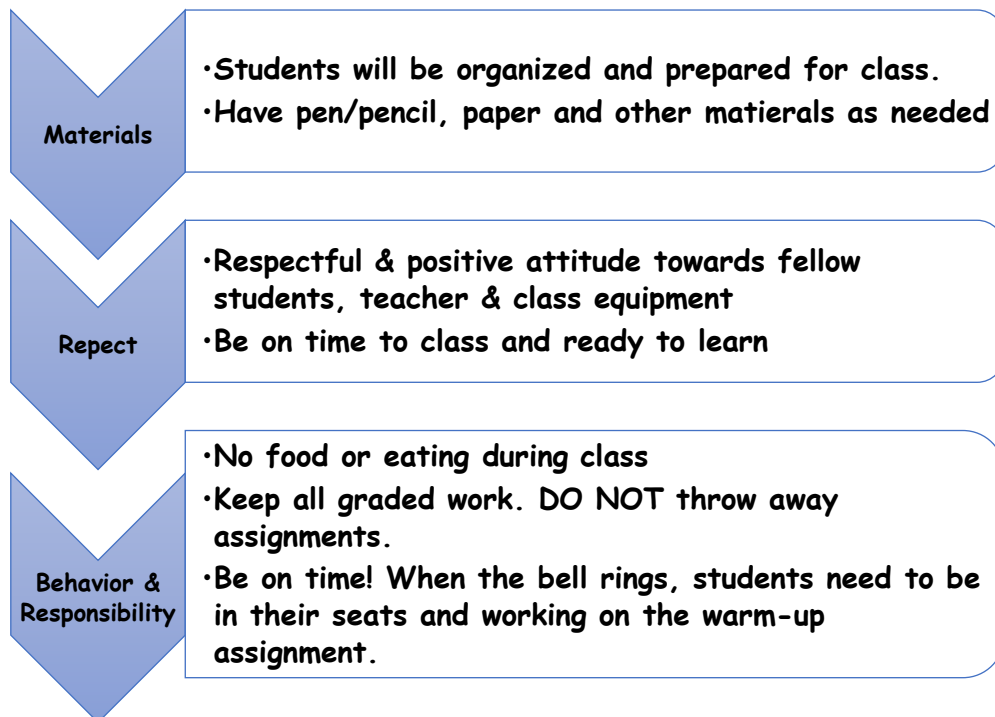
### Overview of general classwork assignments

- **Key Terms:** This is an online assignment to help students review the primary vocabulary for the current unit.
- **Labs:** Labs will be assigned as necessary and may primarily be completed virtually.
- **Daily work:** This will include practice work, various activities to review concepts, review sheets and other assignments.

## Late Work & Absences

- Late work turned in **after** the unit test will receive 50% credit.
- Late work will only be accepted up to 1 unit late
- Excused absences will have 1 day for each day absent plus one additional day to complete any missed work.
- If absent for 3 or more days, you must get missing assignments from CTLS or website before coming back to school.

### Rules & Expectations *Be deliberately successful*



### Discipline Policy

- 1<sup>st</sup> offense - Verbal warning
- 2<sup>nd</sup> offense - Teacher detention & parent contact
- 3<sup>rd</sup> offense - Administrative referral

*Additional offenses will be considered an act of insubordination.*

NOTE: Any of these above steps can be taken at any time, and some behaviors may require a seat change, relocation to another room, or immediate referral.

### Physics Outline

- Unit 0** – Fundamentals: SI units, converting units, dimensional analysis, graphing, making measurements and observations, simple equation algebra
- Unit 1<sup>a</sup>** – Velocity: motion, speed, velocity, interpreting motion graphs (position v. time and velocity v. time)
- Unit 2<sup>a</sup>** – Acceleration: accelerated motion, freefall, interpreting motion graphs
- Unit 3** – Projectiles: vector combinations (same direction, opposite direction, perpendicular vectors), projectile motion (horizontally launched with calculations, non-horizontally launched by vector components)
- Unit 4<sup>b</sup>** – Newton's Laws: Newton's 3 laws of motion
- Unit 5<sup>b</sup>** – Applications of Newton's Laws: specific forces and uses of Newton's laws, friction, pressure, air resistance, circular motion, universal gravitation
- Unit 6** – Momentum: momentum, impulse, collisions, conservation of momentum
- Unit 7** – Mechanical energy: work, power, potential and kinetic energy, conservation of energy
- Unit 8<sup>c</sup>** – Electrostatics: electric charge interactions, methods of electrical charging, electrical potential energy
- Unit 9<sup>c</sup>** – Electric current: flow of electric charge (current), voltage, resistance, electric power, circuits (series/parallel)
- Unit 10** – Magnetism: cause of magnetism from atomic level up to bar magnet, electromagnetism (build an electromagnet), electric motor, electric generator, transformer, electrical power distribution
- Unit 11<sup>d</sup>** – Mechanical waves: motion (pendulum), transverse & longitudinal waves, interference, standing waves
- Unit 12<sup>d</sup>** – Sound waves: specific longitudinal waves, Doppler effect, resonance, diffraction, interference
- Unit 13** – Light and color: electromagnetic waves/radiation, electromagnetic spectrum, human light/color reception, color mixing, polarization, refraction, diffraction
- Unit 14** – Optics: reflection, refraction, mirrors (plane, concave, convex), lenses (convex, concave), ray diagrams, image formation (real, virtual)