

# DP Physics SL/HL

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***At Huron High School, the community of sciences promotes a culture of exploration through the development of inquiry, critical thinking, and a sustainable global perspective.***

## Course Overview

Physics is the most fundamental of the experimental sciences, as it seeks to explain the universe itself, from the very smallest particles to the vast distances between galaxies. Despite the exciting and extraordinary development of ideas throughout the history of physics, observations remain essential to the very core of the subject. Models are developed to try to understand observations, and these models can become theories that attempt to explain the observations. Besides helping us better understand the natural world, physics gives us the ability to alter our environments.

This raises the issue of the impact of physics on society, the moral and ethical dilemmas, and the social, economic and environmental implications of the work of physicists.

By studying physics, students should become aware of how scientists work and communicate with each other. While the scientific method may take on a wide variety of forms, it is the emphasis on a practical approach through experimental work that characterizes the subject.

## Learner Profile

Physics is based on students being Inquirers and Thinkers to become more Knowledgeable. This is not a solitary pursuit, so a successful student will work to become a Communicator who is Open-Minded to other ideas. The concepts of the course will be challenging, so students will need to be

Risk-takers who are Caring to help others along the journey. A Reflective student will be better suited to experience a Balanced educational experience.

While important for the content of the course, these traits will be valuable for future success in school and beyond.

## Topics

### Year One

- Measurement and Uncertainty
- Mechanics
  - Kinematics
  - Forces
  - Energy
  - Momentum
- Circular Motion and Gravitation
- Charges
  - Electrostatics
  - Circuits
  - Electricity and Magnetism
- Thermal Physics
- Group 4 Project
- Internal Assessment (IA)

### Year Two

- Waves
  - Oscillations and Wave Structure
  - Sound
  - Light
  - Imaging
- Atomic, Nuclear and Particle Physics
- Energy Production

### Internal Assessment (IA)

The Internal Assessment for Physics is a laboratory experiment designed, performed and written up by the student. The assessment score is based on evidence of:

- Personal Engagement
- Exploration
- Analysis
- Evaluation
- Communication

The IA score counts 20% of the student's diploma score.

We will practice these elements throughout the first year of the course. Every quarter, the students will provide evidence of practice of each area based in labs performed in class. This evidence will be uploaded to the ManageBac course site.

### Grading

Your Physics grade is based on your performance on the Content Assessment Criteria and the IA Evidence.

### Assessment Corrections

Learning does not have to stop at the assessment for a particular topic. Correction opportunities will be provided after the student has demonstrated further study and completion of **all** of the practice provided on that topic.

### Expectations

In this classroom, learning is the number one priority. All behavior in the classroom should contribute to your learning as well as the entire learning community. Asking questions is critical to the success of the community. Please take advantage of the opportunities for extra help during lunch or after school.

**Academic integrity** is an absolute requirement. Remember that you are building your name and reputation. If you take unfair advantage on an assignment, you will receive a permanent zero on that assignment and will

not be allowed to make it up. There will also be disciplinary consequences.

Please use appropriate language in the classroom. The language you use with your friends may not be classroom-appropriate. Racial slurs, hate speech, and bullying are not acceptable.

### Electronic Devices

Cell phones and other electronic devices can be powerful tools if used properly. If your phone is distracting you, or others, from classwork, I will confiscate it and take it to the office at the end of the day. Phones can then be picked up from the office at the end of the day.

### Websites

Throughout the course, useful documents and links will be posted to the ManageBac site as well as [www.cainephysics.com](http://www.cainephysics.com) under the DP Physics tab.

### Home and In-Class Practice

Research has shown that success in Physics courses is related to the quality of the practice. The amount of practice for each student on each topic will depend on the individual needs of the student. Assessment items will be similar to the practice provided.

### Absences

If you miss a class, it is your responsibility to find out what happened that day and make up the work quickly in order to stay up with the material. In this course, we will continually build upon previous material, so it is important to not bypass any material along the way.