

Welcome to Honors Physics! The goal of this course is to learn the concepts of physics by actively engaging in the scientific process: observation, hypothesis, testing, and application. Modern day scientists work in collaboration with other scientists in order to solve complex problems. Class work will be primarily group work, and active participation is crucial to your success. (The focus on group work still applies in remote instruction!)

Teacher contact info:

dbuchan@bhpsnj.org
(908) 464-3100 x2332

Extra help (when in-person):

- Before school most days after 7 am
- After school most days
- During lunch (2nd half on days 1 and 2, 1st half on day 4)
- Blocks B, E, or F if you have study hall
- NHS tutors are also available to help you.
- Online resources are available in Google Drive.

Extra help (when remote):

- After school most days via Zoom
- Online resources are available in Google Drive.

Required Supplies:

- Pencils
- High-quality eraser
- Scientific calculator
- Three-Ring binder with loose leaf notebook paper
 - Not a folder. You will receive many handouts that need to stay organized.
 - Not a spiral notebook. Your notes need to be placed chronologically with the handouts in your binder.

Class Expectations:

During remote instruction you are expected to be seated at a desk or table, with all of your supplies available, and be fully engaged in the lesson just as you would be if you were in the classroom. Your camera should be on, and you will frequently be called on to participate in the discussion or respond to questions during Zoom meetings. Your grade in the class will be partially based on your completion of assignments during the Zoom meetings, and credit for late submission of these assignments will not be permitted except in the case of documented absences.

Grading (Subject to change in remote instruction):

Your course grade will be determined on a total points basis, and will be based on homework assignments, lab reports, quizzes, and tests. All assignments are to be completed individually unless you are told otherwise. The point values will generally correspond to the following percentages:

<u>Activity</u>	<u>Percentage</u>
Homework & Projects	10-15%
Remote Instruction Classwork	TBD
Lab Reports	20-25%
Quizzes & Tests	60-65%

Description of activities:

Homework: Homework will be assigned daily, and will be submitted in Google classroom. Research shows that when you reflect on new information within the first eight hours, you increase the chances of making permanent connections in your brain. Homework will be graded for effort and completion, not correctness, but effort on the homework is highly correlated with content mastery and test scores. Every student will receive individual feedback on their homework, and you are encouraged to resubmit the assignment until you understand it completely. We will generally not discuss the homework problems in class, so it is your responsibility to ask questions or come for extra help if needed.

Lab Reports: For most of the lab activities you will turn in an informal lab write-up. While the design and performance of a lab investigation is a group task, the lab report you submit must be your own work, written in your own words. Additionally, one or two times per marking period your group will submit a formal lab report. Rubrics will be provided.

Quizzes: Occasionally there will be a short quiz on the current topic. Quizzes will be announced, usually two days in advance. You will have the opportunity to resubmit quizzes to improve your grade. To reclaim points lost on a quiz, you must submit the corrected solutions to all of your incorrect problems, along with a short explanation of what you did wrong, how you corrected it, and what you have learned. You can reclaim up to 50% of the points lost initially, so for example a grade of 60% can be improved to 80%. (Process subject to change in remote instruction.)

Tests: At the end of each instructional unit you will be assessed on the topics we studied. Test dates will be announced approximately one week ahead and study guides will be provided. Your overall grade in the class is primarily based on your test grades. (Test format is subject to change in remote instruction.)

Topics to be explored (order may vary):

Topic

- 1) Kinematics (Motion)
- 2) Dynamics (Forces)
- 3) Circular Motion & Gravitation
- 4) Momentum
- 5) Energy
- 6) Torque & Rotational Motion
- 7) Electrostatics
- 8) Circuits
- 9) Simple Harmonic Motion
- 10) Waves & Sound