Honors Physics Syllabus

Instructor: Mr. Steven Reife **Year:** 2025-2026 **School:** Katz Yeshiva High School

Course Description

Welcome to Honors Physics! This is a challenging and rewarding course designed to provide a comprehensive and quantitative understanding of the fundamental principles that govern the physical world. The curriculum will build upon your mathematical foundation to explore concepts from classical mechanics to modern physics. This course emphasizes problem-solving, critical thinking, and laboratory investigations to help you develop a deeper appreciation for the laws of nature.

Course Objectives

By the end of this course, students will be able to:

- Apply the principles of physics to solve complex, quantitative problems.
- Analyze and interpret data from laboratory experiments.
- Develop strong critical thinking and analytical skills.
- Communicate scientific ideas clearly and effectively, both verbally and in writing.
- Understand the connections between various fields of physics and their applications in the real world.

Units of Study

The course is divided into the following major units, each with a corresponding project or lab component:

- **Unit 1: Introduction to Physics**
- **Unit 2: Motion in 1 Dimension**
- **Unit 3: Forces and Newton's Laws of Motion**
- **Unit 4: Motion in Two Dimensions**
- **Unit 5: Circular Motion and Gravity**
- **Unit 6: Conservation Laws**
- **Unit 7: Simple Machines**
- **Unit 8: Rotational Motion**

Course Text

The primary course text is the CK-12 Physics Flexbook 2.0. You can access it online here: CK-12 Physics Flexbook 2.0

Grading Policy

Your final grade will be determined by the following components:

- **Tests:** 40%
- **Quizzes:** 20%
- **Homework/Assignments:** 10%
- **Labs/Projects:** 30%

Required Materials

- Notebook of your choice for practicing problems (I recommend a spiral notebook and post-it tabs to mark the units.
- Either a folder with prongs or a 3-ring binder for guided notes, handouts, and lab worksheets.
- Scientific calculator (graphing calculator recommended)

Classroom Expectations

1. **Be Prepared:** Come to class on time with all necessary materials.
2. **Participate:** Engage in class discussions, ask questions, and collaborate respectfully with your peers.
3. **Be Punctual:** All assignments are due on the date specified. Late work will be subject to a penalty.
4. **Academic Integrity:** All work must be your own. Cheating or plagiarism will result in a zero for the assignment and a report to the administration.
5. **Device Policy:** Phones are prohibited in class. Laptops and tablets are typically not needed during class time. It is advised that you have your device with you, just in case, but it's not necessary. If devices become a distraction, we will move to a device-free class period.