Pacing Guide
Course: AP Physics 2 **Grade: 12**

Months/Days	UNITS	STANDARDS	CONTENT
September	**Nuclear Physics**	• **HS-PS2-8** • **HS-PS2-6**	• **The Nucleus** • **Decay Types** • **Half-Life** • **Shielding**
October	**Fluid Physics**	• **HS-PS2-6** • **HS-PS3-1**	• **Density** • **Pressure** • **Buoyancy** • **Continuity of Flow** • **Bernoulli's Principle**
November	**Thermodynamics**	• **HS-PS2-6** • **HS-PS3-1** • **HS-PS3-4**	• **Temperature** • **Pressure** • **Gas Laws** • **PV Diagrams** • **Conduction**
December	**Optics**	• **HS-PS2-6** • **HS-PS4-1** • **HS-PS4-3** • **HS-PS4-4**	• **Light Properties** • **Reflection and Refraction** • **Lenses and Mirrors** • **Critical Angles** • **Polarization**

January	**Circuits**	• **HS-PS2-6** • **HS-PS3-1**	• **Review of Terms** • **Circuit Types** • **Internal Resistance** • **Kirchhoff's Circuit Rules**
February	**Charges**	• **HS-PS1-3** • **HS-PS2-2** • **HS-PS2-4** • **HS-PS2-5**	• **Electrostatics** • **Fields** • **Voltage** • **Potential Energy** • **Magnetic Forces on Charges**
March	**Induction**	• **HS-PS2-5** • **HS-PS3-1** • **HS-PS3-5**	• **Source of Induction** • **Flux** • **Electromotive Force** • **Lenz's Law**
April	**AP Review**		
May/June	**Relativity**	• **HS-ETS1-2** • **HS-ETS1-4**	• **Classical Relativity** • **Invariance of the speed of light** • **Time Dilation** • **Length Contraction** • **Mass Increase** • **Other changes in Relativity**

For each unit, the activities and assessments are of the type listed below. The actual activities are adjusted each year based on the availability of equipment, student interest, and the school calendar.

Activities include:

- Labs on multiple topics covered in the unit. These labs take place once a week. Students will be using technology such as Pocket Labs, LabQuests, Smart Phones, Chromebooks and Various probes to discover relationships dealing with the physical principle being studied that week. Often times simulation software will be coupled with the physical lab to enhance a student's understanding of the topic.

- Projects involving Desmos on either a smartphone or Chromebook that will have the students model the mathematics of a physical system.

- Creation of spreadsheets using Google Sheets to complete repetitive calculations that will allow students to find some kind of pattern in nature.

- Working in computer-generated physics problems so that each student must demonstrate competence in the topic being studied.

Assessments include:

- Nearly daily progress checks on the ideas that we have covered that day. These progress checks can be google forms that students fill out, computer-generated questions that each student must answer, or a simple problem that is done in the notebook that the teacher goes around to check.

- A weekly lab report that students will complete, sometimes on paper and sometimes on the computer.

- A weekly quiz that assesses student knowledge on the topics covered during the week.

- A major test at the end of each unit (about once a month) to make sure students have mastered the connections between all the topics in the unit.

- A marking period assessment that will show that students have mastered the connections between topics in one unit and topics in other units.