

AP[®] Physics C: **Electricity and** Magnetism

Your Course at a Glance

Plan

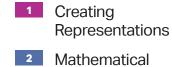
The Course at a Glance provides a useful visual organization for the AP Physics C: Electricity and Magnetism course components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic year and for 90 minute periods meeting daily for a single semester.
- Progression of topics within each unit.
- Spiraling of the science practices across units.

Teach

PRACTICES

Science Practices spiral throughout the course.



Routines

3 Scientific Questioning and Argumentation

Required Course **Content**

Each topic contains required Learning Objectives and Essential Knowledge Statements that from the basis of the assessment on the AP Exam.

Assess

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Assign the Progress Checks—either as homework or in class—for each unit. Each Progress Check contains formative multiple-choice and freeresponse questions. The feedback from these checks shows students the areas where they need to focus.

UNIT Electric Charges, Fields,

and Gauss's Law

~12/~24 Class Periods 15-25% AP Exam Weighting

8.1 Electric Charge and Electric

8.2 Conservation of Electric Charge and the Process of Charging

8.3 Electric Fields

8.4 Electric Fields of Charge **Distributions**

8.5 Electric Flux

8.6 Gauss's Law

UNIT

Electric Potential

~10/~20 Class Periods 10-20% AP Exam Weighting

9.1 Electric Potential Energy 9.2 Electric Potential

9.3 Conservation of Electric

UNIT

Conductors and Capacitors

~8/~16 Class Periods 10–15% AP Exam Weighting

1 10.1 Electrostatics with **Conductors**

10.2 Redistribution of Charge between Conductors

10.3 Capacitors

1 10.4 Dielectrics

UNIT

Electric Circuits

~12/~24 Class Periods 15-25% AP Exam Weighting

1 11.1 Electric Current

1 11.2 Simple Circuits

1 11.3 Resistance, Resistivity, and Ohm's Law

11.4 Electric Power

1 11.5 Compound Direct Current

11.6 Kirchhoff's Loop Rule

1 11.7 Kirchhoff's Junction Rule

1 11.8 Resistor Capacitor (RC) **Circuits**

Magnetic Fields and Electromagnetism

~10/~20 Class Periods 10-20% AP Exam Weighting

12.1 Magnetic Fields

1 12.2 Magnetism and Moving Charges

1 12.3 Magnetic Fields of Current-**Carrying Wires and the Biot-Savart Law**

1 12.4 Ampère's Law

UNIT 12

> Electromagnetic Induction

UNIT

13

~10/~20 Class Periods 10-20% AP Exam Weighting

13.1 Magnetic Flux

13.2 Electromagnetic Induction

1 13.3 Induced Currents and **Magnetic Forces**

1 13.4 Inductance

13.5 Circuits with Resistors and **Inductors (LR Circuits)**

1 13.6 Circuits with Capacitors and Inductors (LC Circuits)

Progress Check 8

Multiple-choice: ~18 questions

- Free-response: 4 questions
- Mathematical Routines Translation Between Representations
- Experimental Design and Analysis
- Qualitative/Quantitative Translation

Progress Check 9

Multiple-choice: ~18 questions Free-response: 4 questions

- Mathematical Routines
- Translation Between Representations Experimental Design and Analysis
- Qualitative/Quantitative Translation

Progress Check 10

Multiple-choice: ~18 questions Free-response: 4 questions

- Mathematical Routines
- Translation Between Representations
- Qualitative/Quantitative Translation

Experimental Design and Analysis

Progress Check 11

Multiple-choice: ~24 questions

- Free-response: 4 questions
- Mathematical Routines Translation Between Representations
- Experimental Design and Analysis
- Qualitative/Quantitative Translation

Progress Check 12

Multiple-choice: ~18 questions Free-response: 4 question

- Mathematical Routines
- Translation Between Representations
- Experimental Design and Analysis Qualitative/Quantitative Translation

Progress Check 13

Multiple-choice: ~18 questions **Free-response: 4 questions**

- Mathematical Routines
- Translation Between Representations Experimental Design and Analysis
- Qualitative/Quantitative Translation