



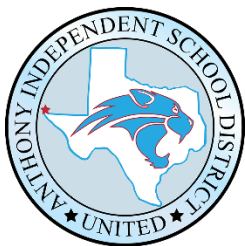
# **Anthony High School**

## **Science Courses Syllabi**

Teacher: Lorena Salas

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# Anthony High School

Teacher: Lorena Salinas

Subject: Chemistry Syllabus

## First Semester

### 1<sup>st</sup> Nine Weeks

#### Unit 1: Scientific Practices & Safety

- TEKS: SCI.C.1 (scientific practices), SCI.C.2 (safe practices), SCI.C.3 (equipment and technology)
- Duration: ~2 weeks

#### Unit 2: Gases & Gas Laws

- TEKS: SCI.C.10A–10C (kinetic molecular theory, gas law relationships, ideal gas law)
- Duration: ~3 weeks

#### Unit 3: Matter and Energy

- TEKS: SCI.C.5A (classify matter), SCI.C.5B (physical/chemical properties), SCI.C.5C (conservation of mass/energy)
- Duration: ~2 weeks

#### Unit 4: Atomic Structure & Periodic Table

- TEKS: SCI.C.6A (atomic theory), SCI.C.6B (subatomic particles), SCI.C.7A–7B (periodic table patterns, trends)
- Duration: ~2 weeks

### 2<sup>nd</sup> Nine Weeks

#### Unit 5: Chemical Bonding

- TEKS: SCI.C.7C–7F (ionic, covalent, metallic bonding, Lewis structures, polarity, intermolecular forces)
- Duration: ~4 weeks

### **Unit 6: Nomenclature & Chemical Formulas**

- TEKS: SCI.C.7G–7I (naming compounds, writing formulas, predicting products)
- Duration: ~2 weeks

### **Unit 7: Chemical Reactions**

- TEKS: SCI.C.8A–8C (types of reactions, balancing equations, evidence of chemical change)
- Duration: ~3 weeks

## **3<sup>rd</sup> Nine Weeks**

### **Unit 8: The Mole & Stoichiometry**

- TEKS: SCI.C.9A–9D (Avogadro's number, molar conversions, stoichiometric calculations, limiting reactants)
- Duration: ~3 weeks

### **Unit 9: Solutions**

- TEKS: SCI.C.11A–11C (solution properties, concentration, colligative properties)
- Duration: ~3 weeks

### **Unit 10: Thermochemistry**

- TEKS: SCI.C.12A–12C (energy changes, calorimetry, enthalpy, heat transfer)
- Duration: ~3 weeks

## **4<sup>th</sup> Nine Weeks**

### **Unit 11: Acids & Bases**

- TEKS: SCI.C.13A–13C (properties, pH calculations, neutralization)
- Duration: ~3 weeks

### **Unit 12: Nuclear & Modern Applications**

- TEKS: SCI.C.14A–14B (radioactivity, nuclear applications, real-world implications)
- Duration: ~2–3 weeks

Unit 1. Place Value of Whole Numbers and Decimals (10 days)

TEKS: 4.2A – H

Unit 2. Addition and Subtraction of Whole Numbers and Decimals. (7 days)

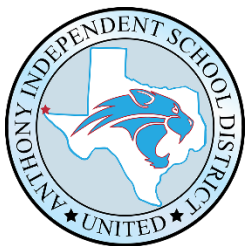
TEKS: 4.2D, 4.4A, 4.4G, 4.5A, 4.10B, 4.10E

Unit 3. Multiplication of Whole Numbers (8 days)

TEKS: 4.4B, 4.4C, 4.4.D, 4.4G, 4.4H, 4.5A

Unit 4. Division of Whole Numbers (11 days)

TEKS: 4.4E, 4.4F, 4.4G, 4.4H, 4.5A



# Anthony High School

Teacher: Lorena Salinas

Subject: Integrated Physics and Chemistry  
Syllabus (IPC)

## First Semester

### 1<sup>st</sup> Nine Weeks (Chemistry Focus)

#### Unit 1: Scientific Practices & Safety (~1–2 weeks)

- **TEKS:** IPC.1 (scientific practices), IPC.2 (safe practices), IPC.3 (equipment & technology)
- Focus: Safety procedures, measurement, data collection, dimensional analysis.
- **Activities:** Safety contract, lab equipment scavenger hunt, metric conversions.

#### Unit 2: Matter & Energy (~3 weeks)

- **TEKS:** IPC.5A–C
- Focus: Properties of matter, physical vs. chemical changes, conservation of mass & energy.
- **Activities:** Density lab, physical vs. chemical change stations.

#### Unit 3: Atomic Structure & Periodic Table (~3 weeks)

- **TEKS:** IPC.6A–B, IPC.7A–B
- Focus: Structure of the atom, subatomic particles, periodic table patterns and properties.
- **Activities:** Flame test lab, periodic table scavenger hunt.

#### Unit 4: Chemical Bonding & Reactions (~1–2 weeks)

- **TEKS:** IPC.7C–F, IPC.8A–B
- Focus: Types of chemical bonds, compounds, chemical equations, reaction evidence.
- **Activities:** Bonding models, balancing equations practice, chemical reaction labs.

## 2<sup>nd</sup> Nine Weeks (Chemistry Focus)

### Unit 5: The Mole & Stoichiometry (Introductory) (~2 weeks)

- **TEKS:** IPC.9A–C
- Focus: Moles, molar mass, basic conversions, simple reaction ratios.
- **Activities:** Mole-to-mass practice, simple stoichiometry labs.

### Unit 6: Gases & Gas Laws (~2 weeks)

- **TEKS:** IPC.10A–B
- Focus: Gas behavior, pressure, volume, temperature, simple gas law relationships.
- **Activities:** Balloon gas law lab, syringe pressure demo.

### Unit 7: Solutions & Acids/Bases (~3 weeks)

- **TEKS:** IPC.11A–C, IPC.12A–B
- Focus: Properties of solutions, solubility, pH, neutralization.
- **Activities:** pH indicator lab, Kool-Aid molarity activity.

### Unit 8: Introduction to Motion (~2 weeks)

- **TEKS:** IPC.5C, IPC.13A–B
- Focus: Speed, velocity, acceleration, graphing motion.
- **Activities:** Motion graph lab with carts or sensors.

## 3<sup>rd</sup> Nine Weeks (Physics Focus)

### Unit 9: Forces & Newton's Laws (~3 weeks)

- **TEKS:** IPC.13C–D
- Focus: Net force, Newton's three laws, friction, balanced vs. unbalanced forces.
- **Activities:** Force and motion carts lab, friction testing activity.

### Unit 10: Work, Power, and Energy (~3 weeks)

- **TEKS:** IPC.14A–C
- Focus: Work-energy theorem, kinetic & potential energy, conservation of energy, power.
- **Activities:** Pendulum energy lab, energy skate park simulation.

### **Unit 11: Waves & Sound (~3 weeks)**

- **TEKS:** IPC.15A–C
- **Focus:** Properties of waves, sound frequency, resonance, Doppler effect.
- **Activities:** Slinky wave lab, sound resonance tube experiment.

## **4<sup>th</sup> Nine Weeks (Physics Focus)**

### **Unit 12: Light & Optics (~3 weeks)**

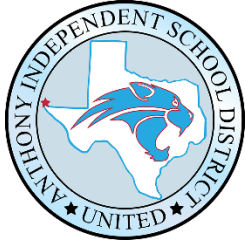
- **TEKS:** IPC.16A–B
- **Focus:** Wave vs. particle models of light, reflection, refraction, image formation.
- **Activities:** Lens/mirror lab, refraction index demo.

### **Unit 13: Electricity & Magnetism (~3 weeks)**

- **TEKS:** IPC.17A–C
- **Focus:** Static electricity, circuits, Ohm's law, electromagnetism.
- **Activities:** Circuit building lab, electromagnet design project.

### **Unit 14: Nuclear & Modern Applications (~2 weeks)**

- **TEKS:** IPC.18A–B
- **Focus:** Nuclear reactions, radiation, real-world applications.
- **Activities:** Half-life simulation, case study on nuclear energy.



# Anthony High School

Teacher: Lorena Salinas

Subject: Physics Syllabus

## First Semester

### 1<sup>st</sup> Nine Weeks

#### Unit 1: Scientific Practices & Safety (~1–2 weeks)

- **TEKS:** P.1 (scientific practices), P.2 (safe lab practices), P.3 (equipment & technology).
- Focus: Lab safety, SI units, dimensional analysis, error and uncertainty in measurement.
- Activities: Safety contracts, measurement & uncertainty lab.

#### Unit 2: Motion in One Dimension (Kinematics) (~4 weeks)

- **TEKS:** P.5C (distance, displacement, speed, velocity, acceleration in 1-D).
- Focus: Position-time and velocity-time graphs, constant vs. accelerated motion, free fall.
- Activities: Motion graphing with sensors, free fall lab.

#### Unit 3: Motion in Two Dimensions (~5 weeks)

- **TEKS:** P.5D (projectile motion, 2-D vectors).
- Focus: Vector addition, relative motion, horizontal and vertical motion independence.
- Activities: Projectile motion lab with launchers, vector addition using force tables.

### 2<sup>nd</sup> Nine Weeks

#### Unit 4: Forces and Newton's Laws (~2 weeks)

- **TEKS:** P.5A–B (net force, Newton's laws, dynamics).
- Focus: Inertia,  $F=ma$ , action-reaction, friction, tension, normal force.
- Activities: Newton's 2nd law lab with carts, friction investigation.



### **Unit 5: Work, Energy & Power (~3 weeks)**

- **TEKS:** P.6A–C (work, energy conservation, power).
- Focus: Work-energy theorem, kinetic & potential energy, mechanical energy conservation.
- Activities: Energy skate park simulation, pendulum lab.

### **Unit 6: Momentum & Collisions (~2 weeks)**

- **TEKS:** P.7A–C (impulse, momentum conservation, collisions).
- Focus: Elastic vs. inelastic collisions, impulse-momentum theorem.
- Activities: Collision carts lab, egg drop impulse challenge.

### **Unit 7: Circular Motion & Gravitation (~2 weeks)**

- **TEKS:** P.5E (uniform circular motion, centripetal force, universal gravitation).
- Focus: Newton's law of gravitation, orbital motion, satellites.
- Activities: Centripetal force lab with whirling stopper, orbital motion simulations.

## **3<sup>rd</sup> Nine Weeks**

### **Unit 8: Harmonic Motion & Waves (~2 weeks)**

- **TEKS:** P.8A–C (simple harmonic motion, mechanical waves, wave properties).
- Focus: Springs, pendulums, frequency, wavelength, speed, interference.
- Activities: Slinky wave lab, pendulum period investigation.

### **Unit 9: Sound (~2 weeks)**

- **TEKS:** P.8D (properties of sound waves).
- Focus: Frequency, pitch, resonance, Doppler effect.
- Activities: Sound wave resonance tube lab, Doppler effect demo.

### **Unit 10: Light & Optics (~3 weeks)**

- **TEKS:** P.9A–C (properties of light, reflection/refraction, image formation).
- Focus: Mirrors, lenses, optical instruments.
- Activities: Refraction through lenses lab, mirror image tracing.

## 4<sup>th</sup> Nine Weeks

### Unit 11: Electricity (~3 weeks)

- **TEKS:** P.10A–C (electric charge, Ohm’s law, circuits).
- Focus: Static electricity, current, resistance, simple circuits, power.
- Activities: Circuit building with resistors, Ohm’s law lab.

### Unit 12: Magnetism & Electromagnetism (~2 weeks)

- **TEKS:** P.10D (magnetic fields, electromagnetic induction).
- Focus: Relationship between electricity and magnetism, motors, generators.
- Activities: Build an electromagnet, Faraday’s induction demo.

### Unit 13: Modern Physics & Applications (~2 weeks)

- **TEKS:** P.11A–B (quantum theory, nuclear physics, applications).
- Focus: Atomic models, photoelectric effect, nuclear energy, particle physics basics.
- Activities: Nuclear decay simulations, case study on medical imaging.