

Hamilton Heights School Corporation

Integrated Chemistry & Physics Curriculum Map

Course Title: Integrated Chemistry & Physics	Quarter 1:	Academic Year: 2025-26
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Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Measurement (1)	8-10	ICP-1.1 ICP-1.3	Metric system measurements (Area, Volume, Density)	- Convert metric units and prefixes - Calculate area and volume - Calculate density and identify	Unit 1 Test	Distance Measurement Lab Penny Density Lab
Particle Chemistry (2)	8-10	ICP-1.1 ICP-1.3	- States of Matter - Difference of Physical and Chemical Changes	- Determine differences between the particle behaviors of solids, liquids, and gases - Identify physical changes compared to chemical changes	Unit 2 Test	PhET States of Matter Physical vs Chemical Changes Lab
Atomic Structure (3)	8-10	ICP-1.2 ICP-1.3	- Atomic Structure - Organization of Periodic Table - Ionization of Atoms	- Determine and diagram the number of subatomic particles in an atom - Identify the various ways	Unit 3 Test	PhET Build an Atom Element Poster Project

				the periodic table is organized Evaluate the charge of an atoms based upon the number of subatomic particles		
Chemical Formulas (4)	8-10	ICP-1.1 ICP-1.2 ICP-1.3	Write Chemical Formulas (Ionic and Covalent)	- Identify ionic and covalent compounds - Correctly name compounds based upon its elemental composition	Unit 4 Test	PhET Build a Molecule

Course Title: ICP	Quarter 2:	Academic Year: 25-26
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Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Reactions (5)	8-10	ICP-1.4	Classify Chemical reactions	Balance chemical reactions	Unit 5 Test	PhET Balancing Equations
Chemical Calculations (6)	8-10	ICP-1.2 ICP-1.4	Stoichiometric calculations (empirical	Perform conversion calculations involving	Unit 6 Test	Stoichiometry Lab

			formulas, formula weights, hydrates)	grams, moles, and particles		
Chemical Solutions (7)	8-10	ICP-1.4	• Solution Molarity • Dilutions • pH and Titrations	• Given data, create solutions of specific concentrations • Dilute solutions to a specific concentration • Perform titration experiment to determine concentration of an unknown solution • Determine the acidity of solutions using the pH scale	Unit 7 Test	pH of Acid/Base Solutions Lab Acid/Base Titrations Lab
Chemical Energy (8)	8-10	ICP-1.1 ICP-1.3 ICP-3.1	• Calorimetry • Phase Changes • Enthalpy	• Calculate the energy of a reaction	Unit 8 Test	Specific Heat of Al Lab Unknown Metal Specific Heat Lab

Course Title: ICP	Quarter 3:	Academic Year: 25-26
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Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Motion (9)	8-10	ICP-2.1 ICP-3.1	• Constant Velocity • Constant Acceleration • Projectile Motion	• Calculate acceleration and velocity for various objects • Evaluate variables of a moving projectile	Unit 9 Test	Constant Velocity Lab Constant Acceleration Lab
Forces (10)	8-10	ICP-2.1 ICP-3.1	• Newton's Laws of Motion • Friction • Net Forces	• Use Newton's Laws to solve and discuss forces acting on an object • Understand how friction opposes motion	Unit 10 Test	
Momentum (11)	8-10	ICP-2.1 ICP-3.1 ICP-3.3	• Collisions • Explosions	• Understand how force and momentum are transferred in collisions	Unit 11 Test	
Work and Energy (12)	8-10	ICP-3.1 ICP-3.2 ICP-3.3	• Kinetic and Potential • Simple Machine • Work and Power	• Calculate the kinetic and potential energy of an object at various points in its movement • Explain how types of energy are converted into each other • Explain how different	Unit 12 Test	

				simple machines are used to decrease the required force, work, and/or power required for an action		
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Course Title:	Quarter 4:	Academic Year: 25-26
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Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Fluid Mechanics (13)	8-10	ICP-1.1 ICP-1.3	- Gas Laws - Pascal's Law - Siphons	- Explain how the factors that affect gases change other factors of the gas - Calculate volume, pressure, and temperature of gases using gas law equations	Unit 13 Test	Pascal's Lab Siphon Lab
Electricity (14)	8-10	ICP-3.4 ICP-3.5	- Ohm's Law - Simple Electric Circuits	Calculate the variables involved in electricity	Unit 14 Test	Single Resistor Circuits Lab

			Series vs Parallel Switches	- using ohm's law - Design and evaluate simple electrical circuits		Double Resistor Circuits Lab
Magnetism (15)	8-10	ICP-3.4	- Bar Magnets - Electromagnets - Electricity Generation	Explain how magnets work and their function in generating electricity	Unit 15 Test	Bar and Electromagnets Lab Generating Electricity/Transformers Lab
Waves/Sound/Light (16)	8-10	ICP-4.1	- Wave Anatomy - Standing Waves - Sound Waves - Light	- Identify various components of a wave - Compare different types of waves and their function in energy transfer - Identify types of electromagnetic radiation from the electromagnetic spectrum	Unit 16 Test	Waves on a String Lab Velocity of Sound Lab Mirrors and Lenses LAB