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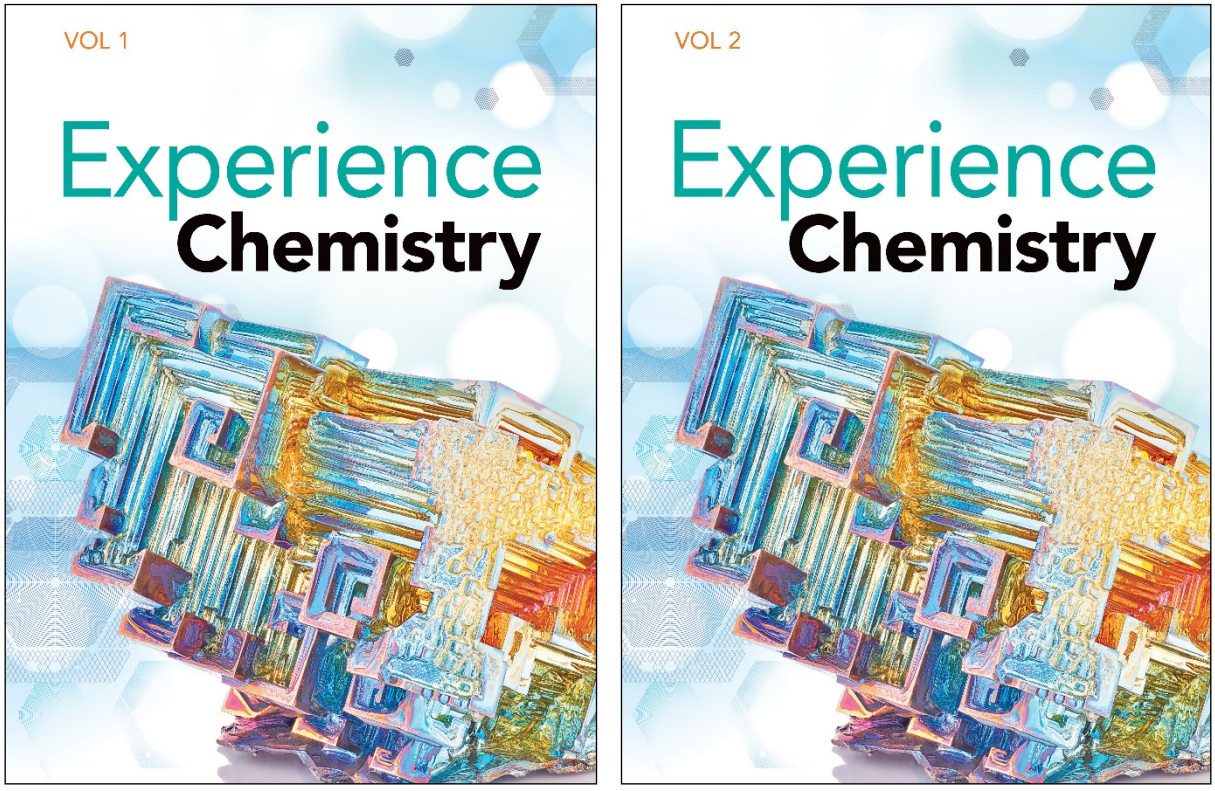

To the

Mississippi
College- and Career-Readiness Standards for Science 2018
High School Chemistry

Prepared by Savvas Learning Company, formerly Pearson K12 Learning

A Correlation of Experience Chemistry ©2021 to the
Mississippi College- and Career-Readiness Standards for Science
High School Chemistry

Introduction

This document demonstrates how **Experience Chemistry ©2021** supports the Mississippi College- and Career-Readiness Standards for Science: High School Chemistry. Correlation references include the Experience Notebook (Vol. 1 and 2), Teacher Guide, and online digital assets.

Savvas Learning Company is excited to introduce **Experience Chemistry!** From climate change, water quality, and the newest energy sources, to the foods we grow and eat, your students will experience chemistry like never before. The program uses cool, weird, and amazing phenomena to engage students in 3-D science. Give students an up-close, first-hand experience they'll never forget.

Be the first to *Experience It!*

Storylines are organized around a real-world Anchoring Phenomena that sparks student curiosity, gives a purpose to learning and connects chemistry concepts through a unifying unique occurrence. Students encounter everyday phenomena through Claims-Evidence Reasoning Exercises, Authentic Readings, STEM Projects, and Engineering Performance Tasks.

Explore Phenomena with Flinn Scientific!

Experience Chemistry and Flinn Scientific partner to deliver high-quality inquiry opportunities to chemistry classrooms. Lab Experiments, Engineering Challenges, Performance Tasks, Virtual Reality Simulations, and Lab Videos by Flinn Scientific immerse students in hands-on chemistry.

Hands-On Labs
• Assign student-friendly labs focused on real-world phenomena in every learning experience.
• Customize your lessons with four versions of every lab including Open-Ended, Guided, Shortened, and Advanced.

Lab Videos
• Background videos, demo videos and summary videos engage and connect students to the phenomena, prepare students and instructors for set-up and revisit concepts before assessments.

Design Challenges and Performance Tasks
• Students mimic the real-world activities of engineers as they define and solve problems and design, test and evaluate solutions.
• Students demonstrate mastery of three-dimensional learning at the end of every Investigation with a Performance-Based assessment.

Lab Kits
• Simplify lab set-up and solution preparation with time-saving lab kits.

Virtual Reality
• Immerse your students in 360º simulations that bring chemistry to life.

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CHE.6.1: Develop and use models to predict the products of chemical reactions (e.g., synthesis reactions; single replacement; double displacement; and decomposition, including exceptions such as decomposition of hydroxides, chlorates, carbonates, and acids). Discuss and/or compile lists of reactions used in everyday life.	**Experience Notebook, Vol. 1:** Combination Reactions, 228 Decomposition Reactions, 229 Sample Problem: Writing Chemical Equations for Combination and Decomposition Reactions, 230 Single-Replacement Reactions, 231 SEP Develop a Model, 231 Sample Problem: Writing Chemical Equations for Single-Replacement Reactions, 233 Double-Replacement Reactions, 234 Sample Problem: Writing Chemical Equations for Double-Replacement Reactions, 235 Combustion Reactions, 236 Sample Problem: Writing Chemical Equations for Combustion Reactions, 237 Predicting the Products of Reactions, 238-239 SEP Use a Model, 239 Revisit Investigative Phenomenon, 240 **Experience Notebook, Vol. 2:** Redox vs. Non-redox Reactions, 284 Revisit Investigative Phenomenon, 287 **Teacher Guide:** **Inquiry Labs:** Types of Chemical Reactions; Predict Chemical Reactions **Digital Activities:** Track Electrons in Redox Reactions
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DCI.CHE.8: Solutions	
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CHE.10: Students will understand that energy is exchanged or transformed in all chemical reactions.	
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CHE.10.2: Classify chemical reactions and phase changes as exothermic or endothermic based on enthalpy values. Use a graphical representation to illustrate the energy changes involved.	**Experience Notebook, Vol. 1:** Energy of Reactions, 223-224 Bond Enthalpy, 285-286 SEP Use a Model, 286 Representations of Enthalpy, 288 SEP Communicate Information, 288 Revisit Investigative Phenomenon, 290 **Teacher Guide:** **Digital Activities:** Energy Changes in Reactions **Performance-Based Assessments:** Enthalpy of a Neutralization Reaction
CHE.10.3: Analyze and interpret data from energy diagrams and investigations to support claims that the amount of energy released or absorbed during a chemical reaction depends on changes in total bond energy.	**Experience Notebook, Vol. 1:** Bond Enthalpy, 285-286 SEP Use a Model, 286 Revisit Investigative Phenomenon, 290 **Teacher Guide:** **Digital Activities:** Energy in Reactions
CHE.10.4: Use mathematical and computational thinking to solve problems involving heat flow and temperature changes, using known values of specific heat and latent heat of phase change.	**Experience Notebook, Vol. 1:** Sample Problem: Using Enthalpy of Reaction to Calculate Enthalpy Change, 289 SEP Use Mathematics, 292 Sample Problem: Calculating the Standard Enthalpy of Reaction, 295 Sample Problem: Calculating the Enthalpy Change in Solution Formation, 297 Revisit Investigative Phenomenon, 298 Sample Problem: Using the Heat of Fusion in Phase-Change Calculations, 301 Sample Problem: Using the Heat of Vaporization in Phase-Change Calculations, 303 **Teacher Guide:** **Inquiry Labs:** The Thermodynamics of Hand Warmers; Hess's Law and the Combustion of a Metal; The Heat of Melting Ice **Digital Activities:** Energy in Reactions **Performance-Based Assessments:** Enthalpy of a Neutralization Reaction

Mississippi College- and Career-Readiness Standards for Science: High School Chemistry	Experience Chemistry ©2021
DCI.CHE.11: Equilibrium (Enrichment)	
CHE.11: Students will understand that chemical equilibrium is a dynamic process at the molecular level.	
CHE.11.1: Construct explanations to explain how to use Le Chatelier's principle to predict the effect of changes in concentration, temperature, and pressure.	**Experience Notebook, Vol. 2:** Le Châtelier's Principle, 176 How Concentration Affects Equilibrium, 177 How Pressure Affects Equilibrium, 178 How Temperature Affects Equilibrium, 179 CCC Stability and Change, 179 **Teacher Guide:** **Inquiry Labs:** Explore Chemical Equilibrium **Performance-Based Assessments:** Reaction Rates and Dissolution
CHE.11.2: Predict when equilibrium is established in a chemical reaction.	**Experience Notebook, Vol. 2:** Chemical Equilibrium, 175 Le Châtelier's Principle, 176 CCC Cause and Effect, 176 **Teacher Guide:** **Inquiry Labs:** Explore Chemical Equilibrium **Digital Activities:** Equilibrium Shifting
CHE.11.3: Use mathematical and computational thinking to calculate an equilibrium constant expression for a reaction.	**Experience Notebook, Vol. 2:** Chemical Equilibrium, 175 **Teacher Guide:** **Inquiry Labs:** Explore Chemical Equilibrium **Digital Activities:** Equilibrium Shifting
DCI.CHE.12: Organic Nomenclature (Enrichment)	
CHE.12: Students will understand that the bonding characteristics of carbon allow the formation of many different organic molecules with various sizes, shapes, and chemical properties.	
CHE.12.1: Construct explanations to explain the bonding characteristics of carbon that result in the formation of basic organic molecules.	**Experience Notebook, Vol. 2:** Carbon Bonding, 312
CHE.12.2: Obtain information to communicate the system used for naming the basic linear hydrocarbons and isomers that contain single bonds, simple hydrocarbons with double and triple bonds, and simple molecules that contain a benzene ring.	**Experience Notebook, Vol. 2:** Representing Hydrocarbons, 313 Hydrocarbon Structures, 314 Alkanes, 315 Alkenes and Alkynes, 318 Isomers, 320-321 Cyclic Hydrocarbons, 322-323

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CHE.12.3: Develop and use models to identify the functional groups that form the basis of alcohols, ketones, ethers, amines, esters, aldehydes, and organic acids.	**Experience Notebook, Vol. 2:** Types of Organic Compounds, 327 Alcohols, 329 Ethers and Amines, 330 Aldehydes and Ketones, 331 Carboxylic Acids and Esters, 332 SEP Use a Model, 332 Identifying Functional Groups, 333 Sample Problem: Identifying Functional Groups, 334 Revisit Investigative Phenomenon, 339 **Teacher Guide:** **Digital Activities:** Identifying Types of Organic Compounds; Esterification and Condensation Reactions