



Chemistry Essentials Curriculum

Reading and Writing Standards

Marking Period	Reading Assessments	Writing Assessments
1	Students will answer questions after reading about a scientific phenomena.	Students will write a scientific procedure on how to build a structure.
2	Students will use the periodic table as a model to predict patterns of electrons in the outermost energy level	Jamboard: Answer the question: what can you read from the periodic table?
3	Students will read chemical equations and analyze the quantity of each substance to determine if the equations are balanced.	Students will use a mathematical representation to support the conservation of mass theory
4	Students will read different types of graphs and models to answer multiple choice questions.	Students will present the scientific process they used in creating a homemade water filtration system.

[Scoring Rubric for Written Work](#)



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Content Topics and Pacing

Topic	Duration	Guiding Questions	Reading and Writing Assignments
Welcome to Class	~8 days	How will your knowledge be assessed in class? What are the required characteristics to be a positive member of this class?	Answering questions from class rubric on how class will operate. Write a future letter to yourself reflecting and setting goals for the school year.
Science Skills	~27 days	How do we use the scientific process? How do we communicate results? How do we use math in science? How do we model scientific phenomena?	Converting measurements Creating a scientific model and answering a prompt using the CER writing method.
Structure and Properties of Matter	~30 days	How is the periodic table organized? What is the structural & compositional difference between elements and compounds?	Use the periodic table to predict the atomic mass of different compounds Create BOHR Model representing the correct number and location of subatomic particles for different elements
Chemical Reactions	~26 days	How are ionic and covalent bonds formed and how does the bond type influence the properties of compounds? What is the format for representing a chemical reaction with a chemical equation?	Use the periodic table to predict the type of bonding that would take place between two different types of elements Jamboard: Answer the question: what can you read from the periodic table?



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Changes in Matter	~21 days	How do we categorize matter? How does the behavior of atoms and molecules determine the physical properties of solids, liquids, and gasses?	Determine the amount of products in a reaction by reading the products of a chemical equation Develop a model to illustrate the energy change in a chemical reaction
The Mole Concept *	~24 days	How can the mass of a sample of an element or compound be related to the individual number of atoms or molecules contained in the sample?	Using the mole concept model, determine the volume a 100 grams of a molecule would occupy. Use a mathematical representation to support the conservation of mass theory
Physics in Chemistry	~28 days	How is physics used to help explain chemical changes? How do we graph rates? How do we describe motion?	Read motion graphs Graph the rate of energy transfer in a chemical reaction
Weather in Chemistry *	~14 days	How does pressure, volume, temperature and the amount of substance relate to weather and climate?	Read an atmospheric pressure map to determine the location of Create a model forecasting a 12 hour period of weather for the midwest. Support model with the ideal gas law.

*These topics can be skipped or adjusted if time does not allow for them