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Timeline	Cur. Standards & Benchmarks-Essential Questions	Learning Targets (M1,M2,M3,M4)	Vocabulary	Assessment
September	**P.PM.M.1 Chemical Properties- Matter has chemical properties. The understanding of chemical properties helps to explain how new substances are formed.** **P.PM.07.11** Classify substances by their chemical properties (flammability, pH, and reactivity)		Flammability pH reactivity acid/base Reactants Products Variables Scientific Method	Labs Reports Test Quiz Written Work Foldables
September / October	**P.PM.M.2 Elements and Compounds- Elements are composed of a single kind of atom that are grouped into families with similar properties on the periodic table. Compounds are composed of two or more different elements. Each element and compound has a unique set of physical and chemical properties such as boiling point, density, color, conductivity,**		Element, Compound boiling point density color conductivity reactivity phase change state of matter Density Mass Volume Metric Units (kilo, meter, etc.)-Mixture Atom Molecule Solution	Lab report Test Quiz Written Work Foldables

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	and reactivity. **P.PM.07.21** Identify the smallest component that makes up an element. **P.PM.07.22** Describe how the elements within the Periodic Table are organized by similar properties into families (highly reactive metals, less reactive metals, highly reactive nonmetals, and some almost completely non-reactive gases). **P.PM.07.23** Illustrate the structure of molecules using models or drawings (water, carbon dioxide, table salt). * **P.PM.07.24** Describe examples of physical and chemical properties of elements and compounds		Families Groups Periodic table Metal nonmetsl	
November/ December	**P.CM.M.2 Chemical Changes- Chemical changes occur when two elements and/or compounds react (including**		Chemical change Physical change Conservation of mass and matter	Lab report Test Quiz

	decomposing) to produce new substances. These new substances have different physical and chemical properties than the original elements and/or compounds. During the chemical change, the number and kind of atoms in the reactants are the same as the number and kind of atoms in the products. Mass is conserved during chemical changes. The mass of the reactants is the same as the mass of the products. * **P.CM.07.21** Identify evidence of chemical change through color, gas formation, solid formation, and temperature change. **P.CM.07.22** Compare and contrast the chemical properties of a new substance with the original after a chemical		Equation Balanced equation Product Reactant	Written Work Science Journal

	change. **P.CM.07.23** Describe the physical properties and chemical Properties			
December/ January	**P.EN.M.3 Waves and Energy-Waves have energy and transfer energy when they interact with matter. Examples of waves include sound waves, seismic waves, waves on water, and light waves.** P.EN.07.31 Identify examples of waves, including sound waves, seismic waves, and waves on water. P.EN.07.32 Describe how waves are produced by vibrations in matter. P.EN.07.33 Demonstrate how waves transfer energy when they interact with matter (for example: tuning fork in water, waves hitting a beach, earthquake knocking over buildings).		Sound Wave Vibration Seismic wave electromagnetic wave Longitudinal Transverse Amplitude Frequency	Lab report Test Quiz Written Work Notebook

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December /January	P.EN.M.4 Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and convection. When energy is transferred from one system to another, the quantity of energy before the transfer is equal to the quantity of energy after the transfer. * **P.EN.06.41** Explain how different forms of energy can be transferred from one place to another by radiation, conduction, or convection. **P.EN.06.42** Illustrate how energy can be transferred while no energy is lost or gained in the transfer	.	Radiation Conduction Convection Conservation of energy	Lab report Test Quiz Written Work Notebook

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December/ January	P.EN.M.1 Kinetic and Potential Energy- Objects and substances in motion have kinetic energy. Objects and substances may have potential energy due to their relative positions in a system. Gravitational, elastic, and chemical energy are all forms of potential energy. **P.EN.06.11** Identify kinetic or potential energy in everyday situations (for example: stretched rubber band, objects in motion, ball on a hill, food energy). **P.EN.06.12** Demonstrate the transformation between potential and kinetic energy in simple mechanical systems (for example: roller coasters, pendulums).		Kinetic Energy Potential energy Gravitational PE Chemical PE	Lab report Test Quiz Written Work Notebook
Febuary	***P*.EN.M.4 Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and**		Photosynthesis	Lab report Test Quiz

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	convection. When energy is transferred from one system to another, the quantity of energy before the transfer is equal to the quantity of energy after the transfer. * **P.EN.07.43** Explain how light energy is transferred to chemical energy through the process of photosynthesis.			Written Work Poster
February	**L.HE.M.2 Reproduction- Reproduction is a characteristic of all living systems; because no individual organism lives forever, reproduction is essential to the continuation of every species. Some organisms reproduce asexually. Other organisms reproduce sexually.** **L.HE.07.21** Compare how characteristics of living things are		Reproduction Sexual Asexual Chromosomes Nucleic acid DNA RNA Heredity	Lab report Test Quiz Written Work Inquiry Lab

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	passed on through generations, both asexually and sexually. **L.HE.07.22** Compare and contrast the advantages and disadvantages of sexual vs. asexual reproduction.			
March	**L.OL.M.3- Growth and Development- Following fertilization, cell division produces a small cluster of cells that then differentiate by appearance and function to form the basic tissue of multicellular organisms. *** **L.OL.07.31** Describe growth and development in terms of increase of cell number and/or cell size. **L.OL.07.32** Examine how through cell division, cells can become specialized for specific functions	.	Cell division Differentiation Stem cell Fertilization Specialization	Lab report Test Quiz Written Work
March	**L.OL.M.6 Photosynthesis- Plants**		Photosynthesis	Lab report

	are producers; they use the energy from light to make sugar molecules from the atoms of carbon dioxide and water. Plants use these sugars along with minerals from the soil to form fats, proteins, and carbohydrates. These products can be used immediately, incorporated into the cells of a plant as the plant grows, or stored for later use. **L.OL.07.61** Recognize the need for light to provide energy for the production of carbohydrates, proteins and fats. **L.OL.07.62** Explain that carbon dioxide and water are used to produce carbohydrates, proteins, and fats. **L.OL.07.63** Describe evidence that plants make, use and store food.		Carbohydrates Protein Fats Glucose Carbon dioxide Cell respiration Nutrients	Test Quiz Written Work Inquiry Lab Project

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April	**E.ES.M.8 Water Cycle- Water circulates through the four spheres of the Earth in what is known as the "water cycle."** **E.ES.07.81** Explain the water cycle and describe how evaporation, transpiration, condensation, cloud formation, precipitation, infiltration, surface runoff, ground water, and absorption occur within the cycle. **E.ES.07.82** Analyze the flow of water between the components of a watershed, including surface features (lakes, streams, rivers, wetlands) and groundwater.		evaporation transpiration condensation cloud formation precipitation infiltration surface runoff ground water water shed	Lab report Test Quiz Written Work Project
April	**E.ES.M.1 Solar Energy- The sun is the major source of energy for phenomena on the surface of the Earth.**		Energy Water cycle Atmosphere Evaporation Condensation Sublimation Convection	Lab report Test Quiz

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	E.ES.07.11 Demonstrate, using a model or drawing, the relationship between the warming by the sun of the Earth and the water cycle as it applies to the atmosphere (evaporation, water vapor, warm air rising, cooling, condensation, clouds). **E.ES.07.12** Describe the relationship between the warming of the atmosphere of the Earth by the sun and convection within the atmosphere and oceans. **E.ES.07.13** Describe how the warming of the Earth by the sun produces winds and ocean currents.		Currents	Written Work
April	**E.ES.M.7 Weather and Climate- Global patterns of atmospheric and oceanic movement influence weather and climate.** **E.ES.07.71** Compare and contrast the		Climate Weather Frontal boundaries Cold front Warm front Occluded front Jet stream Air masses	Lab report Test Quiz Written Work

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	difference and relationship between climate and weather. **E.ES.07.72** Describe how different weather occurs due to the constant motion of the atmosphere from the energy of the sun reaching the surface of the Earth. **E.ES.07.73** Explain how the temperature of the oceans affect the different climates on Earth because water in the oceans holds a large amount of heat. **E.ES.07.74** Describe weather conditions associated with frontal boundaries (cold, warm, stationary, and occluded) and the movement of major air masses and the jet		Ocean currents	
May	**E.ES.M.4 Human Consequences- Human activities have changed the land, oceans, and atmosphere of the Earth**		Pollution surface mining deforestation overpopulation construction urban	Lab report Test Quiz

	resulting in the reduction of the number and variety of wild plants and animals, sometimes causing extinction of species. **E.ES.07.41** Explain how human activities (surface mining, deforestation, overpopulation, construction and urban development, farming, dams, landfills, and restoring natural areas) change the surface of the Earth and affect the survival of organisms. **E.ES.07.42** Describe the origins of pollution in the atmosphere, geosphere, and hydrosphere, (car exhaust, industrial emissions, acid rain, and natural sources), and how pollution impacts habitats, climatic change, threatens or endangers species.		development geosphere hydrosphere acid rain natural resources climatic change habitats industrial emissions	Written Work Project

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May	**E.FE.M.1 Atmosphere- The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different physical and chemical composition at different elevations.** **E.FE.07.11** Describe the atmosphere as a mixture of gases. **E.FE.07.12** Compare and contrast the composition of the atmosphere at different elevations.			Lab report Test Quiz Written Work
All year	**S.IP.M.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.** **S.IP.07.11** Generate scientific questions based on observations, investigations, and research.		Variable Constant Scientific method Hypothesis Theory Conclusion Metric system Best fit line	Lab report Test Quiz Written Work

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	S.IP.07.12 Design and conduct scientific investigations. **S.IP.07.13** Use tools and equipment appropriate to scientific investigations. **S.IP.07.14** Use metric measurement devices in an investigation. **S.IP.07.15** Construct charts and graphs from data and observations. **S.IP.07.16** Identify patterns in data.			
All Year	**S.IA.M.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.** **S.IA.07.11** Analyze information from data tables and graphs to answer scientific questions. **S.IA.07.12** Evaluate data, claims, and personal knowledge through collaborative science discourse.			Lab report Test Quiz Written Work Project

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	S.IA.17.13 Communicate and defend findings of observations and investigations. **S.IA.07.14** Draw conclusions from sets of data from multiple trials of scientific investigation to draw conclusions. **S.IA.07.15** Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.			
All Year	**S.RS.M.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.** **S.RS.07.11** Evaluate the strengths and weaknesses of claims, arguments, and data.	.		Lab report Test Quiz Written Work

	S.RS.07.12 Describe limitations in personal and scientific knowledge. **S.RS.07.13** Identify the need for evidence in making scientific decisions. **S.RS.07.14** Evaluate scientific explanations based on current evidence and scientific principles. **S.RS.07.15** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities. **S.RS.07.16** Design solutions to problems using technology. **S.RS.07.17** Describe the effect humans and other organisms have on the balance of the natural world. **S.RS.07.18** Describe what science and technology can and cannot reasonably contribute to society. **S.RS.07.19** Describe how science and technology have			

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	advanced because of the contributions of many people throughout history and across cultures			