New Paltz Central School District
Science
Physical Science

Time	Essential Questions/Content	Standards/Skills	Assessments
September – October	**<u>Unit 1: Energy and Energy Transfer</u>** • What is energy? What are its different forms? • How is energy transformed and conserved in everyday life? • How can we build devices that convert energy from one form to another?	• Safely and accurately use measurement tools • Use appropriate units for measured and calculated values • Recognize and analyze patterns and trends • Sequence events • Identify cause and effect relationships • Use indicators and interpret results	• Energy project • Quizzes • Tests
November - December	**<u>Unit 2: Physical Properties of Matter</u>** • What are the properties of solids, liquids, and gasses? • How does heat affect matter? • How does the motion of particles determine the phases of matter?	• Follow safety procedures in the classroom and laboratory • Safely use laboratory burner and associated equipment • Identify patterns and trends • Identify cause and effect relationships	• Quizzes • Lab report • Unit test
January	**<u>Unit 3: Force, Mass, and Weight</u>** • What are force, mass, and weight? • What is the relationship between weight and gravity? • How are force, mass, and weight measured? • How are mass and weight related?	• Accurately use a spring scale and balance • Use appropriate units for measured and calculated values • Collect, plot, and graph data • Use computer technology	• Lab report and graph analysis • Quizzes

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February	**<u>Unit 4: Heat and Heat Transfer</u>** • How is heat measured? • How is heat transferred?	• Accurately use instruments for measuring heat • Recognize patterns and trends	• Heat transfer project • Heat transfer lab report • Quizzes
February - March	**<u>Unit 5: Elements, Atoms, and the Periodic Table</u>** • What is an element? • How are elements the building blocks of the universe? • What is an atom and what is its structure? • What are subatomic particles? • What is the periodic table? • How does the position of an atom in the periodic table reflect the atom's structure? • How do atoms interact? --- • Concept of an element • Properties of elements • Types of subatomic particles and their properties • Atoms and atomic structure • Electron arrangement in an atom	• Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context. • Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). • Write arguments focused on *discipline-specific content.* • Write informative/explanatory texts, including scientific procedures/experiments, or technical processes. • Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. • Use appropriate units for measured and calculated values • Recognize and analyze patterns and trends • Determine the identity of an unknown element using physical and chemical properties • Utilize the organization of the periodic table to predict the structure of an atom • Utilize the organization of the periodic table to predict the properties of an atom • Diagram atoms • Classify objects according to an established scheme	• Lab report • Element project • Tests/quizzes

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April	**<u>Unit 6: Chemistry</u>** • How do chemical changes produce new substances? • How do chemical reactions provide evidence for the Law of Conservation of Mass? • How are substances characterized by how they react?	• Follow safety procedures in the classroom and laboratory • Safely and accurately use measurement tools • Use appropriate units for measured and calculated values • Sequence events • Identify cause and effect relationships • Use indicators and interpret results • Collect data	• Quizzes
May - June	**<u>Unit 7: Electricity and Magnetism</u>** • What is a magnetic field? • What is electricity? • What is an electrical circuit? • How are electricity and magnetism related? • How is electrical energy transformed into other forms of energy?	• Recognize magnetic field lines • Recognize patterns and trends • Diagram and build basic electrical circuits • Collect data • Apply learned concepts to new situations and tasks	• Lab report • Quizzes • Electromagnetic invention project report