8th Grade Earth Science Curriculum Mapping St. Leo School
10/13/11

Month	Content	Skills
August/September	Meteorology 2.2, 2.5, 2.6	• Names the various gases that comprise the atmosphere. • Describes the main characteristics of the various layers and temperature zones of the atmosphere. • Describes the Greenhouse Effect. • Describes the causes and effects of temperature inversions • Knows that land and water absorb and retain heart at different rates. • Understands humidity and the amount of moisture present in the air. • Describes the effect that temp. And pressure have on the amount of moisture in the atmosphere • Demonstrates how to measure relative humidity and the dew point
September/October	Meteorology 2.2, 2.5, 2.6	• Describes the water cycle • Describes how colds are formed • Lists the main characteristics of the various cloud types • Describes the conditions needed to produce fog, dew, and frost • Describes the main characteristics of the various type of precipitation.
November	Meteorology (continued)	• List the main characteristics of the major air masses (e.g., temp., humidity, etc.) • List the major causes of hurricanes, cyclones, tornadoes, and thunderstorms. • Describe safety precautions to take in various storm situations • Describes the causes of lightning and thunder • Describes the differences between high and low-pressure areas. • Understands how low and high pressure affects weather. • Describes land and sea breezes • Understands how the rotations of the earth effects winds • Demonstrates how to record daily weather conditions • Demonstrates how to use a weather map • Describes the function and use of the major weather measurement instruments.

How are
mixtures and

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Month	Content	Skills
December	• Alloys • Elements, • Compounds and mixtures. • Physical properties of • Mixtures • Suspensions, colloids • and solutions.	• Classify various store-bought substances as element, compound or mixture based on their ingredient labels. • Develop methods of separating various mixtures into their components based on their physical properties. • Analyze and model the physical characteristics of suspensions, colloids and solutions. • Categorize the different chemical and physical changes and properties. • Investigate properties of substances (e.g., color, texture, hardness etc.), analyze the properties of the • substances
January	• Atomic structure • Atomic mass and atomic number • Isotopes • Periodic Table • Metals, Nonmetals & metalloids	• Build models of atoms and isotopes of various elements. • Classify elements based on their chemical reactivity and increasing atomic numbers. • Understand and re-create the Periodic Table using increasing atomic number and characteristics. • Use a conductivity meter to sample various items to check for electrical current
February/March	• Chemical formulas • Compounds • Covalent bonds • Dot diagrams • Ions and ionic bonds • Molecular mass • Naming of compounds • Polyatomic ions	• Analyze atomic structure and electric forces. • Investigate how the structure of matter (e.g., outer electrons, type of bond) relates to chemical properties of matter. • Investigate how the structure of matter (e.g., constituent atoms, distances and angles between atoms) relates to physical properties of matter.

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Month	Content	Skills
April/May	• Acceleration • Air resistance • Circular motion Conservation of momentum • Forces and net forces • Friction • Gravity • Inertia • Momentum • Newton's first law • Newton's 2nd law • Newton's 3rd law • Projectile motion • Speed • Velocity • Weight	• Measure and calculate speed of a moving object • Investigate effects of forces on the motion of objects. • Create distance vs. time and velocity vs. time graphs and interpret those types of graphs. • Investigate the importance of inertia using lab equipment. • Measure and calculate acceleration given a net force. • Predict and measure time required for an object to fall • Create, calculate, and construct two dimensional vectors. • Investigate circular motion with turntable. • Investigate action/reaction pairs (skateboard lab). • Predict behavior of objects after collisions (conservation of momentum). • Investigate the laws of physics most often employed in amusement park thrill rides. • Investigate forces and the effects of forces on the motion of objects • Investigate gravitational and electromagnetic forces

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Month	Content	Skills

September – December	**Develops skills used in gathering, organizing, analyzing and applying information and or concepts** 2.1, 2.2, 2.3, 2.4, 2.5, 2.6	• Observes objects and phenomena • Identifies, describes and classifies the properties of objects and phenomena • Uses common materials appropriately for laboratory experiments or demonstrations • Knows the standard units of measurement in both the metric and English units • Measures the size, mass and volume of objects • Recognizes cause and effect relationships • Uses scientific method - Makes inferences - Forms hypotheses - Determines procedures - Follows procedures - Control Variables - Collects and records data - Reports data graphically - Interprets data, graphs, tables etc. - Estimates results - Predicts outcomes - Draws conclusions - Makes deductions - Makes generalizations from obtained data - Organizes information in a written form			Completes and Science Fair project following the scientific method. Completes various lab assignments.