New Paltz Central School District

Science
First Grade

TIME	CONTENT	SKILLS	ASSESSMENTS

September - June	**<u>Weather</u>**
	• How do the seasons affect us?
	• Why do we measure temperature?
	• How does the temperature of the air change throughout the year?
	• How does precipitation change throughout the year?
	- - -
	• Natural cycles and patterns include: weather changing from day to day and through the seasons.
	• Weather is the condition of the outside air at a particular moment.
	• Weather can be described by:
	  ○ temperature.
	  ○ form and amount of precipitation.
	  ○ general sky conditions (cloudy, sunny, partly cloudy).
	• Everyday events involve one form of energy being changed to another: the Sun's energy warms the air and water.
		• Safely and accurately use a hand lens and thermometer.
		• Select appropriate standard and nonstandard measurement tools for measurement activities.
		• Use and record appropriate units for measured or calculated values.
		• Utilize senses optimally for making observations.
		• Observe, analyze, and report observations of objects and events.
		• Observe, identify, and communicate patterns.
		• Observe, identify, and communicate cause-and-effect relationships.
		• Generate appropriate questions (teacher and student based) in response to observations, events, and other experiences.
		• Observe, collect, organize, and appropriately record data (weather graph), then accurately interpret results.
		• Collect and organize data, choosing the appropriate representation: journal entries, graphic representations (weather graphs); drawings/pictorial representations.
		• Make predictions based on prior experiences and/or information.
			• Unit assessment
			• Weather graph assessment
			• Observation of process skills
			• Accurate recordings of observations
			• Student sharing – complete sentences, sequencing, full descriptions, vocabulary
			• Following directions

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December - January	**<u>Astronomy</u>**
	• How are the Earth, Moon, and Sun related?
	• How does the Sun's energy help or harm us?
	• In what ways does the moon appear to change over time?
	• How are shadows formed?
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	• Natural cycles and patterns include:
	  ○ Earth spinning around once every 24 hours (rotation), resulting in day and night.
	  ○ Earth moving in a path around the Sun (revolution), resulting in one Earth year.
	  ○ The length of daylight and darkness varying with the seasons.
	  ○ The appearance of the Moon changing as it moves in a path around Earth to complete a single cycle.
	• Interactions with forms of energy can be either helpful or harmful.
	• Everyday events involve one form of energy being changed to another: the Sun's energy warms the air and water.
		• Safely and accurately use a thermometer.
		• Use and record appropriate units for measured or calculated values.
		• Observe, analyze, and report observations of objects and events.
		• Observe, identify, and communicate patterns (moon phases).
		• Observe, identify, and communicate cause-and-effect relationships (day/night, light/shadow).
		• Generate appropriate questions (teacher and student based) in response to observations, events, and other experiences (e.g. What I wonder….).
		• Collect and organize data, choosing the appropriate representation: journal entries (moon observation journals); graphic representations; drawings/pictorial representations.
		• Make predictions based on prior experiences and/or information.
		• Communicate procedures through oral and written presentations.
			• Unit assessment
			• Observation of process skills
			• Accurate recordings of observations
			• Student sharing – complete sentences, sequencing, full descriptions, vocabulary
			• Following directions

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Science
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April	**<u>Matter</u>** • What is the universe made of? • What happens when energy interacts with matter? • What are the ways we describe and classify matter? - - - • Matter takes up space and has mass. Two objects cannot occupy the same place at the same time. • Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses. • Objects have properties that can be observed, described, and/or measured: length, width, volume, size, shape, mass or weight, temperature, flexibility, reflectiveness of light. • Measurements can be made with standard units and nonstandard units. • The material(s) an object is made up of determine some specific properties of the object (sink/float, conductivity, magnetism). Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets, circuit testers, and graduated cylinders. • Objects and/or materials can be sorted or classified according to their properties.	• Safely and accurately use a hand lens, balance, ruler, thermometer, gram weights, and dropper. • Select appropriate standard and nonstandard measurement tools for measurement activities. • Estimate, find, and communicate measurements, using standard and nonstandard units. • Use and record appropriate units for measured or calculated values. • Order and sequence objects and/or events. • Classify objects according to an established scheme. • Generate a scheme for classification. • Utilize senses optimally for making observations. • Observe, analyze, and report observations of objects and events. • Observe, identify, and communicate cause-and-effect relationships. • Generate appropriate questions (teacher and student based) in response to observations, events, and other experiences.	• Unit assessment • Observation of process skills • Accurate recordings of observations • Student sharing – complete sentences, full descriptions, sequencing vocabulary • Following directions

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Science
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	• Scientists currently believe that matter exists in four states: solid, liquid, gas, and plasma. (First grade concentrates on solid, liquid, and gas.)
	  ○ Solids have a definite shape and volume.
	  ○ Liquids do not have a definite shape but have a definite volume.
	  ○ Gases do not hold their shape or volume.
	• Temperature can affect the state of matter of a substance.
	• Energy exists in various forms: heat, electric, sound, chemical, mechanical, light. *(First grade focuses on heat and light.)*
	• Energy can be transferred from one place to another.
	• Interactions with forms of energy can be either helpful or harmful.
		• Observe, collect, organize, and appropriately record data, then accurately interpret results.
		• Make predictions based on prior experiences and/or information.
		• Compare and contrast organisms/objects/events in the living and physical environments.
		• Communicate procedures and conclusions through whole group demonstrations and language experiences.	

New Paltz Central School District

Science
First Grade

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May - June	**<u>Animals</u>** • What does it mean to be alive? • What are characteristics of animals (focus on local birds, fish, mammals)? • How am I and all living animals part of a life cycle? • How can we study animals that live in the Hudson Valley? • What do we need to grow and be healthy? - - - • Animals need air, water, and food in order to live and thrive. • Plants and animals closely resemble their parents and other individuals in their species. • Each animal has different structures that serve different functions in growth, survival, and reproduction: wings, legs, or fins enable some animals to seek shelter and escape predators. • Plants and animals have life cycles. These may include beginning of a life, development into an adult, reproduction as an adult, and eventually death.	• Safely and accurately use a hand lens. • Order and sequence objects and/or events. • Classify objects according to an established scheme. • Generate a scheme for classification. • Utilize senses optimally for making observations. • Observe, identify, and communicate patterns. • Generate appropriate questions (teacher and student based) in response to observations, events, and other experiences. • Collect and organize data, choosing the appropriate representation: journal entries; graphic representations; drawings/pictorial representations.	• Unit assessment • Observation of process skills • Accurate recordings of observations • Student sharing – complete sentences, sequencing, full descriptions, vocabulary • Following directions

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	• Each generation of animals goes through changes in form from young to adult. This completed sequence of changes in form is called a life cycle. Some insects change from egg to larva to pupa to adult. • Each kind of animal goes through its own stages of growth and development during its life span. • The length of time from an animal's birth to its death is called its life span. Life spans of different animals vary. • Growth is the process by which plants and animals increase in size. • Food supplies the energy and materials necessary for growth and repair. • All living things grow, take in nutrients, breathe, reproduce, and eliminate waste. • An organism's external physical features can enable it to carry out life functions in its particular environment. • Humans need a variety of healthy foods, exercise, and rest in order to grow and maintain good health. • Good health habits include hand washing and personal cleanliness; avoiding harmful substances (including alcohol, tobacco, illicit drugs); eating a balanced diet; engaging in regular exercise.		