Wallenpaupack Area School District

Wallenpaupack Area North Primary and South Elementary
Course Title: Grade Two Elementary Science
Length of Course: 80 minutes per week

District Policies:

Academic Integrity:
Academic integrity is essential to the success of an educational community. Students are responsible for learning and upholding professional standards of research, writing, assessment, and ethics in their areas of study. Written or other work which students submit must be the product of their own efforts and must be consistent with appropriate standards of professional ethics. Academic dishonesty, which includes cheating, plagiarism, multiple submissions and other forms of dishonest or unethical behavior, is prohibited.

Assessment:
The goal of grading is to report student progress and achievement to the parents to strengthen the home-school connection. The grade should accurately reflect the student's performance in mastering the PA Standards and the WASD curriculum.

Attendance:
Regular school attendance is vitally important to academic success. Not only does attendance reinforce and enrich the learning process; it also establishes patterns and attitudes that will carry forward into adult work habits. Regular, consistent attendance is a prerequisite to successful school life. Children should be absent only in cases of illness or emergency.

Special Education:
Our commitment to each student is to ensure a free appropriate public education which begins with the general education setting, with the use of Supplementary Aids and Services. Inclusive education describes the successful education of all students with the appropriate supports and services to participate in and benefit from the general classroom settings and other educational environments.

Course Description:

The elementary science curriculum provides opportunities for students to develop understanding and skills to become problem solvers in a scientific world. Students will describe, discuss, identify and compare various landforms and their formation. Students will observe, discuss and differentiate between inherited and learned behaviors and traits. Students will also observe, compare, classify and develop an understanding of plant and animal life cycles. The needs of living things will be identified, investigated and compared to develop an understanding of the effects of changing environments.

Pennsylvania State Standards:

Pennsylvania Landforms and Formation of Landforms	3.2.3.A1	Differentiate between properties of objects such as size, shape, and weight and properties of materials that make up the objects such as color, texture, and hardness.
		Differentiate between the three states of matter, classifying a substance as a solid, liquid, or gas.
	3.3.4.A1	Describe basic landforms.
		Identify the layers of the earth.
		Recognize that the surface of the earth changes due to slow processes and rapid processes.
	3.3.4.A6	MODELS/SCALE
		Identify basic landforms using models and simple maps.
		CONSTANCY/ CHANGE
		Identify simple changes in the earth **system** as air, water, soil and rock interact.
		SCALE
		Explain how basic weather elements are measured.
	S3.C.1.1.1	Describe matter in terms of its observable properties (e.g., weight, mass, shape, size, color, texture, state).
	S3.C.1.1.3	Classify a substance as a solid, liquid, or gas.
	S3.C.1.1.4	Recognize and identify how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).
	S3.C.1.1.5	Describe how the properties of matter can be changed (e.g., heating, cooling, and physical weathering).
	S4.A.3.2.1	Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent

		Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas).
	S4.A.3.3.1	Identify and describe observable patterns (e.g., growth patterns in plants, weather, and water cycle).
	S4.C.1.1.1	Use physical properties [e.g., mass, shape, size, volume, color, texture, magnetism, state (i.e., solid, liquid, and gas), conductivity (i.e., electrical and heat)] to describe matter.
	S4.C.1.1.2	Categorize/group objects using physical characteristics.
	S4.D.1.1.2	Identify various Earth structures (e.g., mountains, watersheds, peninsulas, lakes, rivers, valleys) through the use of models.
	S4.D.1.2.3	Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation).
Inherited Characteristics	3.1.3.A1	Describe characteristics of living things that help to identify and classify them.
Life Cycles	3.1.3.A3	Illustrate how plants and animals go through predictable life cycles that include birth, growth, development, reproduction, and death.
Living things and their needs	3.1.4.A1	Classify plants and animals according to the physical characteristics that they share.
	3.1.4.A2	Describe the different resources that plants and animals need to live.
	3.1.4.A8	MODELS Construct and interpret **models** and diagrams of various animal and plant **life cycles.**
	3.1.5.A3	Compare and contrast the similarities and differences in life cycles of different organisms.
	3.1.3.B1	Understand that plants and animals closely resemble their parents.
	3.1.3.B5	PATTERNS Identify characteristics that appear in both parents and offspring.
	3.1.4.B1	Describe features that are observable in both parents and their offspring.
	3.1.4.B2	Recognize that reproduction is necessary for the continuation of life.

3.1.3.C2	Describe animal characteristics that are necessary for survival.
S3.A.1.1.1	Distinguish between fact and opinion.
S3.A.2.1.1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.
S3.A.2.1.2	Make predictions based on observations.
S3.A.2.2.1	Identify appropriate tools or instruments for specific tasks, and describe the information they provide (i.e., measuring [length—ruler; mass— balance scale] and making observations [hand lenses—very small objects]).
S3.A.3.1.1	Classify systems as either human-made or natural (e.g., human-made systems [balancing systems, tops, wheel and axle systems, pencil sharpeners from manual to electric]; natural systems [plants, animals, water cycle, stream]).
S3.A.3.1.2	Identify changes in natural or human made systems.
S3.B.1.1.1	Identify and describe the functions of basic structures of animals and plants (e.g., animals [skeleton, heart, lungs]; plants [roots, stem, and leaves]).
S3.B.1.1.2	Classify living things based on their similarities and differences.
S3.B.1.1.3	Describe the basic needs of plants and animals and their dependence on light, food, air, water, and shelter.
S3.B.1.1.4	Describe how plants and animals go through life cycles.
S3.B.2.1.1	Identify adaptations of plants and animals that have helped them to survive.
S3.B.2.1.2	Identify and describe plant and animal characteristics that are necessary for survival.
S3.B.2.1.3	Identify characteristics for plant and animal survival in different environments (e.g., desert, forest, and ocean).
S3.B.2.2.1	Identify physical characteristics (e.g., height, hair color, eye color) that could be passed on to offspring.
S3.B.2.2.2	Identify similar physical characteristics in parents and their offspring.
S3.B.3.1.1	Identify the living and nonliving components of an ecosystem (e.g., living [plants, animals]; nonliving [water, soil, air]).
S3.B.3.1.2	Describe the interactions between living and nonliving components of an ecosystem (e.g., plants [water, sunlight]; animals [air, shelter]).

S3.B.3.2.2	Describe how changes in the environment (e.g., fire, flood) can affect an ecosystem.
S3.B.3.2.3	Describe how human interactions with the environment impact an ecosystem (e.g., road construction, pollution, urban development, dam building).
S3.C.1.1.3	Classify a substance as a solid, liquid, or gas.
S3.C.1.1.4	Recognize and identify how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).
S3.C.1.1.5	Describe how the properties of matter can be changed (e.g., heating, cooling, and physical weathering).
S3.D.1.2.2	Identify and describe examples of renewable and nonrenewable resources.
S3.D.1.2.3	Describe the ways living things benefit from the uses of water resources.
S4.A.1.1.1	Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).
S4.A.1.3.5	Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.
S4.A.2.1.1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.
S4.A.2.1.3	Observe a natural phenomenon (e.g., weather changes, length of daylight/night, and movement of shadows, animal migrations, and growth of plants), record observations, and then make a prediction based on those observations.
S4.A.2.1.4	State a conclusion that is consistent with the information/data.
S4.A.2.2.1	Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, and telescope).
S4.A.3.1.1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).
S4.A.3.1.3	Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.
S4.B.1.1.1	Identify life processes of living things (e.g., growth, digestion, respiration).

S4.B.1.1.2	Compare similar functions of external characteristics of organisms (e.g., anatomical characteristics: appendages, type of covering, body segments).
S4.B.1.1.3	Describe basic needs of plants and animals (e.g., air, water, food).
S4.B.1.1.4	Describe how different parts of a living thing work together to provide what the organism needs (e.g., parts of plants: roots, stems, leaves).
S4.B.1.1.5	Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).
S4.B.2.1.1	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).
S4.B.2.1.2	Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).
S4.B.2.2.1	Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed on to offspring.
S5.A.1.1.1	Explain how certain questions can be answered through scientific inquiry and/or technological design (e.g., investigate to find out if all clay or foil boats designs react the same when filled with paperclips).
S5.A.3.1.1	Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day, month, and year], weather, and seasons).
S5.A.3.2.1	Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth-Moon system, ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed).
S5.B.2.1.1	Differentiate between inherited and acquired traits (e.g., scars, injuries).
S5.B.2.1.2	Explain how inherited traits help organisms survive and reproduce in different environments.
S5.B.2.1.3	Explain how certain behaviors help organisms survive and reproduce in different environments.
S5.B.2.1.4	Identify changes in environmental conditions that can affect the survival of populations and entire species.
S5.B.3.1.2	Describe the relationships between organisms in different food webs.
S5.B.3.2.3	Explain how different items are recycled and reused.

Natural and Man Made Earth's Resources Recycling	3.3.5.A2	Describe the usefulness of Earth's physical resources as raw materials for the human made world.
	3.4.3.A1	Identify how the natural made world and the human made world is different.
	3.4.3.A2	Identify that some systems are found in nature and some systems are made by humans.
	3.4.3.B2	Explain how materials are re-used or recycled.
	S3.A.1.1.1	Distinguish between fact and opinion.
	S3.A.2.2.1	Identify appropriate tools or instruments for specific tasks, and describe the information they provide (i.e., measuring [length—ruler; mass— balance scale] and making observations [hand lenses—very small objects]).
	S3.A.3.1.1	Classify systems as either human-made or natural (e.g., human-made systems [balancing systems, tops, wheel and axle systems, pencil sharpeners from manual to electric]; natural systems [plants, animals, water cycle, stream]).
	S3.A.3.1.2	Identify changes in natural or human made systems.
	S3.D.1.2.2	Identify and describe examples of renewable and nonrenewable resources.
	S3.D.1.2.3	Describe the ways living things benefit from the uses of water resources.
	S5.B.3.2.2	Describe the usefulness of Earth's physical resources as raw materials for the human-made world.
	S5.B.3.2.3	Explain how different items are recycled and reused.
	S5.D.1.2.2	Describe the importance of wetlands in an ecosystem.
	S5.D.2.1.1	Explain how the cycling of water into and out of the atmosphere impacts climatic patterns.
Standards taught in all grade levels	3.4.4.A1	Understand that tools, materials, and skills are used to make things and carry out tasks.
	3.4.4.A2	Understand that systems have parts and components that work together.
	3.4.3.B1	Describe how using **technology** can be good or bad.

3.4.3.B3	Identify and define products made to meet individual needs versus wants.
3.4.4.B2	Explain how the use of **technology** affects the environment in good and bad ways.
3.4.4.C3	Explain how asking questions and making observations help a person understand how things work and can be repaired.
S3.D.1.2.2	Identify and describe examples of renewable and nonrenewable resources.
S3.D.1.2.3	Describe the ways living things benefit from the uses of water resources.
S4.A.1.1.1	Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).
S4.A.1.3.2	Describe relative size, distance, or motion.
S4.A.1.3.5	Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.
S4.A.2.1.1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.
S4.A.2.1.2	Design and describe an investigation (a fair test) to test one variable.
S4.A.2.1.3	Observe a natural phenomenon (e.g., weather changes, length of daylight/night, and movement of shadows, animal migrations, and growth of plants), record observations, and then make a prediction based on those observations.
S4.A.2.1.4	State a conclusion that is consistent with the information/data.
S4.A.3.1.1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).
S4.A.3.1.2	Explain a relationship between the living and nonliving components in a system (e.g., food web, terrarium).
S4.A.3.1.3	Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.
S4.B.3.3.1	Identify everyday human activities (e.g., driving, washing, and eating, manufacturing, farming) within a community that depend on the natural environment.
S4.B.3.3.5	Describe the effects of pollution (e.g., litter) in the community.

Course Objectives:

Students will demonstrate the ability to:

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Students will master the skills of:

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Major Activities to Support Course Objectives:

Student Responsibilities:

Attendance expectations:

Homework expectations:

Make-Up Work:

Late Work:

Assessment:

Grading Components:

Content Pacing Guide:

Topic	Major Assignments	Estimated Time
Identify and label basic Earth structures and water formations through the use of models		
Describe locations of fresh and salt water in or near the state of Pennsylvania		
Explain watersheds and wetlands and their importance to plants and animals		
Identify weather patterns and cloud types		
Explain the air, water, and nutrient cycles		
Understand the life cycles of butterflies and frogs		
Explain how specific adaptations can help a living organism to survive		
Explain why each of the four elements in a habitat is essential for animal survival		
Explain why plants and animals differ in coloring, shapes, and sizes and how that is related to inherited characteristics		
Identify renewable and non-renewable resources and identify the use of reusable products		
