LEGO® Education Alignment to PA STEELS 2022 - Environmental Literacy and Sustainability

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Grade	Discipline	Strand	Code	Performance Expectation (Standard) *Students who demonstrate understanding can...*	Clarifying Statement	Solution	Lessons
K-2	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.K-2.A	categorize ways people harvest, re-distribute, and use natural resources.	Examples could include that trees provide food, fiber, and building materials. Trees are logged, transported, and processed into different products, such as fiber, furniture, and buildings. Fruits and nuts from trees are picked, transported, and processed.		
K-2	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.K-2.B	examine how people from different cultures and communities, including one's own, interact and express their beliefs about nature.	Emphasis is on how students' interactions and beliefs about nature compare to someone living in a different community. Emphasis is not on judging anyone's interactions or beliefs about nature.	STEAMPark SPIKEEssential	Needs of Plants and Animals (PK-K): Journey to Different Habitats Science in Nature and Our Daily Life (G2): Habitats
K-2	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.K-2.C	explain ways that places differ in their physical characteristics, their meaning, and their value and/or importance.	Emphasis is on making observations of local environments such as schoolyards, streams, mountains, and fields and sharing their value or meaning. Examples of value or meaning could be their recreational, esthetic (aesthetic), economic, and ecological importance, such as providing a home for animals.	STEAMPark SPIKEEssential	STEAM Park (PK-K): Gears Weather (PK-K): Playground Weather (PK-K): Animal Shelter Needs of Plants and Animals (PK-K): Journey to Different Habitats Great Adventures (1-2): Boat Trip Great Adventures (1-2): Arctic Ride Great Adventures (1-2): Cave Car Great Adventures (1-2): Animal Alarm Great Adventures (1-2): Underwater Quest Great Adventures (1-2): Treehouse Camp Great Adventures (1-2): The Great Desert Adventure Science in Nature and Our Daily Life (G2): Habitats
K-2	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.K-2.D	plan and carry out an investigation to address an issue in their local environment and community.	Examples of planning could include developing questions ('wonder statements") about a local environment issue (such as litter, discolored streams, erosion) and then letting students decide how to answer them.	STEAMPark SPIKEEssential	SP Maker (PK-K): Make a Machine to Help Mr. Bear Needs of Plants and Animals (PK-K): Plants and Animals Change the Environment Needs of Plants and Animals (PK-K): People Helping the Environment Science in Nature and Our Daily Life (G2): Protection from Wind Science in Nature and Our Daily Life (G2): Pollination
3-5	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.3-5.A	analyze how living organisms, including humans, affect the environment in which they live, and how their environment affects them.	Emphasis is on how plants and animals impact their environment and how their environment impacts them. Examples include how pollinators impact food, plants prevent erosion, and sidewalks/roads change water flow.	SPIKEEssential	Science in Nature and Our Daily Life (G2): Classify and Choose Materials Science in Nature and Our Daily Life (G2): Protection from Wind Science in Nature and Our Daily Life (G2): Pollination Animals and Their Environments (G3): Preparing for the Weather Animals and Their Environments (G3): Solving Problems When Environments Change Animals and Their Environments (G3): Animals in Their Habitats Science Connections (G4): Prepare for Natural Hazards Science We Cannot See (G5): Protect the Environment
3-5	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.3-5.B	make a claim about the environmental and social impacts of design solutions and civic actions, including their own actions.	Emphasis is on investigating the short- and long-term consequences or effects of design solutions (i.e., best management practices such as manure management plans, riparian buffers, and wildlife corridors).	SPIKEEssential	Science Connections (G4): Prepare for Natural Hazards

3-5	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.3-5.C	examine ways you influence your local environment and community by collecting and displaying data.	Emphasis is on analyzing individual student behavior. Data can be collected and displayed using multiple digital and analog tools (e.g., computers, calculators, timers) and formats (e.g., graphs, tables, charts		
3-5	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.3-5.D	develop a model to demonstrate how local environmental issues are connected to larger local environment and human systems.	Examples include watersheds, food webs, human food systems, and life cycles. Emphasis is on investigating local environments and understanding how they connect to larger regional, national, and global systems.	SPIKEEssential	Animals and Their Environments (G3): Life Cycles Science We Cannot See (G5): Energy Flow
3-5	Environmental Literacy and Sustainability	Sustainability and Stewardship	3.4.3-5.E	construct an argument to support whether action is needed on a selected environmental issue and propose possible solutions.	Using the claim-evidence-reasoning model or other critical thinking processes, students analyze and synthesize data they have personally collected or compiled from provided sources to support their claims and proposed stewardship actions.		
3-5	Environmental Literacy and Sustainability	Sustainability and Stewardship	3.4.3-5.F	critique ways that people depend on and change the environment.	This could include both positive and negative ways that people depend on and impact the environment. Examples include but are not limited to water, fuel, food, land, and recreation.	SPIKEEssential	Essential Combined (3-5): Create a Critter Essential Combined (3-5): Safe Crossing Science We Cannot See (G5): Protect the Environment Science Connections (G4): Energy Resources Animals and Their Environments (G3): Preparing for the Weather
3-5	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.3-5.G	investigate how perspectives over the use of resources and the development of technology have changed over time and resulted in conflict over the development of societies and nations.	Emphasis is on diverse points of view that may change over time due to new information, developing technology, priorities, or competition for finite resources.	SPIKEEssential	Science Connections (G4): Energy Resources
6-8	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.6-8.A	develop a model to describe how agricultural and food systems function, including the sustainable use of natural resources and the production, processing, and management of food, fiber, and energy.	Emphasis is on models that use inputs and outputs to highlight the lifecycle of food and fiber products.		
6-8	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.6-8.B	analyze and interpret data about how different societies (economic and social systems) and cultures use and manage natural resources differently.	Emphasis is on comparing and contrasting data from two or more societies and cultures to draw evidence-based conclusions. Examples could include how different societies and cultures manage agriculture, recycling and waste management, fossil fuels, land development, and so on.		
6-8	Environmental Literacy and Sustainability	Agriculture and Environmental Systems and Resources	3.4.6-8.C	develop a model to describe how watersheds and wetlands function as systems, including the roles and functions they serve.	Examples of models could include pictorial (2D), abstract, concrete (3D), and computer-simulated models.		
6-8	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.6-8.D	gather, read, and synthesize information from multiple sources to investigate how Pennsylvania environmental issues affect Pennsylvania's human and natural systems.	Examples could include sediment and nutrient loads in Pennsylvania waterways, indoor and outdoor air quality, urban heat islands, and so on.		
6-8	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.6-8.E	collect, analyze, and interpret environmental data to describe a local environment.	Emphasis is on collecting information from a local outdoor area in order to accurately describe that environment. Examples could include weather data, stream studies, data on air quality, biodiversity assessments, and so on.		
6-8	Environmental Literacy and Sustainability	Environmental Literacy Skills	3.4.6-8.F	obtain and communicate information on how integrated pest management could improve indoor and outdoor environments.	Examples of methods of integrated pest management may include biological (e.g., managing indoor air quality), cultural (e.g., planting locally pest-resistant crops or crop rotation), mechanical (e.g., trapping pests), and chemical (e.g., cleaning surfaces in schools) treatments of invasives; materials and procedures for cleaning surfaces and air in schools; and maintaining or promoting biodiversity.		
6-8	Environmental Literacy and Sustainability	Sustainability and Stewardship	3.4.6-8.G	obtain and communicate information to describe how best resource management practices and environmental laws are designed to achieve environmental sustainability.	Emphasis is on the intended outcomes of best management practices (e.g., stormwater, forest, land use, wildlife, and waste management) and environmental laws (i.e., international, federal, state, and local jurisdictions).		
6-8	Environmental Literacy and Sustainability	Sustainability and Stewardship	3.4.6-8.H	design a solution to an environmental issue in which individuals and societies can engage as stewards of the environment.	Examples of design solutions could include written or drawn plans, as well as implementing project actions.	SPIKEPrime	Prime Combined (6-8): Smart House: Go Green Prime Combined (6-8): Protect Our Produce
6-8	Environmental Literacy and	Sustainability and Stewardship	3.4.6-8.I	construct an explanation that describes regional environmental conditions and their implications on environmental justice and	Examples include both current and historical conditions due to systemic inequalities, including but not limited to human health impacted by Superfund sites, air quality, urban heat islands, acid mine drainage, access to green space		

	Sustainability	Sustainability and Stewardship	S.4.6.6.	conditions and their implications on environmental justice and social equity.	air quality, urban heat islands, acid mine drainage, access to green space, biodiversity, and water quality. Explanations could be constructed using primary and secondary sources, both print and digital.		

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