Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Big Idea(s) for 1st nine weeks	Concept(s) of 1st nine weeks	Competencies of 1st nine weeks	Essential Questions for 1st nine weeks
Cells and organisms, both those you can and cannot see, interact and impact every living thing on Earth. The sun is the beginning to every living thing on Earth. The water and rock cycles shape our Earth and impact how we live.	Students will know… ● the difference between unicellular and multicellular organisms ● what plants need to survive (emphasis on photosynthesis) ● the parts parts of a plant ● the difference between xylem and phloem ● the jobs of xylem and phloem ● the movement of matter in the environment ● the roles in food chains ● how matter moves in food chains ● food webs and how interruptions in food webs affect the environment ● energy is transferred from the sun to animals ● the water cycle and the rock cycle	Students will be able to… ● distinguish between unicellular and multicellular organisms ● diagram what plants need to survive (emphasis on photosynthesis) ● match parts of a plant to a diagram ● label xylem and phloem on a diagram ● reiterate the jobs of xylem and phloem ● show the movement of matter in the environment ● identify roles in food chains ● use food chains diagrams to understand how matter moves in food chains ● interpret food webs ● investigate how interruptions in food webs affect the environment ● show energy transfer from the sun to animals (show energy being used for body repair, growth, motion, body warmth) ● describe the water cycle and the rock cycle	What three components do plants need to survive? Why do plants experience photosynthesis? What are the roles of xylem and phloem? From largest to smallest, what are the levels in the food chain pyramid? What level eats a producer? What percentage of energy is passed from level to level in a food chain? What happens if a certain component is removed from a food web? How does the sun impact our bodies? Does the water cycle ever end? How does the rock cycle impact Earth?

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Unit/Chapter/Selection of Study	Approx # of weeks - % of time	PA STEELS Standards	Clarifying Statement and Assessment Boundary
Cells and Organisms	8 weeks	3.1.5.A Support an argument that plants get the materials they need for growth chiefly from air and water. 3.1.5.B Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. 3.2.5.G Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. 3.4.3-5.A Analyze how living organisms, including humans, affect the environment in which they live, and how their environment affects them.	3.1.5.A Clarifying Statement: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil 3.1.5.A Assessment Boundary: N/A 3.1.5.B Clarifying Statement: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth. 3.1.5.B Assessment Boundary: Assessment does not include molecular explanations 3.2.5.G Clarifying Statement: Examples of models could include diagrams, and flow charts. 3.2.5.G Assessment Boundary: N/A 3.4.3-5.A Clarifying Statement: 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. 3.4.3-5.A Assessment Boundary: N/A
Unit/Chapter/Selection of Study Earth and Space	**Approx # of weeks - % of time** 1 week (starts in 1st nine weeks and continues into 2nd nine weeks)	**PA STEELS Standards** 3.3.5.A Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 3.3.5.D Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 3.5.3-5.W Describe the properties of different materials. 3.2.5.F Support an argument that the gravitational force exerted by Earth on objects is directed down. 3.3.5.B Represent data in graphical	**Clarifying Statement and Assessment Boundary** 3.3.5.A Clarifying Statement: N/A 3.3.5.A Assessment Boundary: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage). 3.3.5.D Clarifying Statement: N/A 3.3.5.D Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere 3.5.3-5.W Clarifying Statement:

		displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 3.3.5.C Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 3.4.3-5.F Critique ways that people depend on and change the environment. 3.3.5.E Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. 3.3.5.F Generate and design possible solutions to a current environmental issue, threat, or concern.	Students should understand the difference between natural and human-made materials and their basic properties. For example, wood, stone, metal, glass, and concrete are hard and dense; leather, paper, and some metals are flexible; glass and some plastics are transparent. Some materials conduct heat and electricity while others insulate to stop or delay transmission of heat or electricity. The properties of a specific material determine whether it is suitable for a given application. 3.5.3-5.W Assessment Boundary: N/A 3.2.5.F Clarifying Statement: “Down” is a local description of the direction that points toward the center of the spherical Earth. 3.2.5.F Assessment Boundary: Assessment does not include mathematical representation of gravitational force. 3.3.5.B Clarifying Statement: Examples of patterns could include the position and motion of Earth with

			respect to the sun and selected stars that are visible only in particular months. 3.3.5.B Assessment Boundary: Assessment does not include causes of seasons 3.3.5.C Clarifying Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system. 3.3.5.C Assessment Boundary: Assessment is limited to the interactions of two systems at a time. 3.4.3-5.F Clarifying Statement: 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.

			3.4.3-5.F Assessment Boundary: N/A 3.3.5.E Clarifying Statement: N/A 3.3.5 E Assessment Boundary: N/A 3.3.5 F Clarifying Statement: This could include but is not limited to topics such as biodiversity, watersheds, invasive species, natural resources, etc. 3.3.5. F Assessment Boundary: N/A

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Big Idea(s) for 2nd nine weeks	Concept(s) of 2nd nine weeks	Competencies of 2nd nine weeks	Essential Questions for 2nd nine weeks
The geosphere, biosphere, hydrosphere, and atmosphere affect one another. Humans impact Earth positively and negatively in a variety of ways.	Students will know… ● parts of the geosphere, biosphere, hydrosphere, and atmosphere ● how the geosphere, biosphere, hydrosphere, and atmosphere interact ● why the sun is so bright even though it isn't the biggest star ● a possible solution to an environmental issue ● patterns of stars and shadows ● Earth's water distribution ● properties of minerals by examining them ● ways communities protect Earth's resources ● gravity is the force causing us to touch the ground when we jump (or similar examples) ● the ways humans rely on and impact the environment ● how landforms affect systems on Earth	Students will be able to… ● name parts of the geosphere, biosphere, hydrosphere, and atmosphere ● show how the geosphere, biosphere, hydrosphere, and atmosphere interact ● explain why the sun is so bright even though it isn't the biggest star ● design a possible solution to an environmental issue ● draw patterns of stars and shadows ● graph Earth's water ● determine properties of minerals by examining them ● research ways communities protect Earth's resources ● identify gravity as the force causing us to touch the ground when we jump (or similar examples) ● provide ways humans rely on and impact the environment ● determine how landforms affect systems on Earth	What percentage of Earth is water? What percentage of Earth's water is freshwater and saltwater? Why do we have day and night? Why can we see different groups of stars at different times of the year? The sun isn't the biggest star, so why is it so bright? What makes up Earth's geosphere? What is the atmosphere made of? What does the prefix "hydro" indicate? What makes up the biosphere? How many days does it take Earth to make one revolution/orbit around the sun? How long does it take Earth to make one rotation? What force causes objects to be

			directed down? Where do minerals come from? How do humans impact the environment? How are humans trying to protect Earth's resources?
Unit/Chapter/Selection of Study Earth and Space	**Approx # of weeks - % of time** 9 weeks (continued from 1st nine weeks)	**PA STEELS Standards** 3.3.5.A Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. 3.3.5.D Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. 3.5.3-5.W Describe the properties of different materials. 3.2.5.F Support an argument that the gravitational force exerted by Earth on objects is directed down.	**Clarifying Statement and Assessment Boundary** 3.3.5.A Clarifying Statement: N/A 3.3.5.A Assessment Boundary: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage). 3.3.5.D Clarifying Statement: N/A 3.3.5.D Assessment Boundary: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere

		3.3.5.B Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. 3.3.5.C Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. 3.4.3-5.F Critique ways that people depend on and change the environment. 3.3.5.E Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. 3.3.5.F Generate and design possible solutions to a current environmental issue, threat, or concern.	3.5.3-5.W Clarifying Statement: Students should understand the difference between natural and human-made materials and their basic properties. For example, wood, stone, metal, glass, and concrete are hard and dense; leather, paper, and some metals are flexible; glass and some plastics are transparent. Some materials conduct heat and electricity while others insulate to stop or delay transmission of heat or electricity. The properties of a specific material determine whether it is suitable for a given application. 3.5.3-5.W Assessment Boundary: N/A 3.2.5.F Clarifying Statement: "Down" is a local description of the direction that points toward the center of the spherical Earth. 3.2.5.F Assessment Boundary: Assessment does not include mathematical representation of gravitational force. 3.3.5.B Clarifying Statement:

			Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months. 3.3.5.B Assessment Boundary: Assessment does not include causes of seasons 3.3.5.C Clarifying Statement: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system. 3.3.5.C Assessment Boundary: Assessment is limited to the interactions of two systems at a time. 3.4.3-5.F Clarifying Statement: 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. 3.4.3-5.F Assessment Boundary: N/A 3.3.5.E Clarifying Statement: N/A 3.3.5 E Assessment Boundary: N/A 3.3.5 F Clarifying Statement: This could include but is not limited to topics such as biodiversity, watersheds, invasive species, natural resources, etc. 3.3.5. F Assessment Boundary: N/A

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Big Idea(s) for 3rd nine weeks	Concept(s) of 3rd nine weeks	Competencies of 3rd nine weeks	Essential Questions for 3rd nine weeks
Everything is made of matter because of the combination of atoms. Materials serve different purposes. Mass is neither created nor destroyed.	Students will know… ● matter is made of tiny particles ● matter is made of particles too small to be seen ● materials are different ● what materials to use for a job based on properties ● materials based on their properties ● the law of conservation of mass ● physical and chemical changes ● ball-and-stick models ● chemical formulas for ball-and-stick models ● elementary substances and compounds ● how particle motion affects temperature, change of state, and gas pressure ● reactants and products	Students will be able to… ● show matter is made of tiny particles ● model that matter is made of particles too small to be seen ● make observations and measurements of materials ● decide what materials to use for a job based on properties ● identify materials based on their properties ● demonstrate the law of conservation of mass ● compare physical and chemical changes ● show physical and chemical changes ● interpret ball-and-stick models ● match chemical formulas to ball-and-stick models ● complete chemical formulas for ball-and-stick models ● classify elementary substances and compounds ● determine how particle motion affects temperature, change of state, and gas pressure ● identify reactants and products	Are molecules in motion in all states of matter (solid, liquid, gas)? Which is more malleable: copper or steel? What property of a mineral describes how dull or shiny it is? Moh’s scale measures what property of a mineral? What is the law of conservation of mass? What is the difference between a physical change and a chemical change? What would the ball-and-stick model look like for water and for carbon dioxide? What happens to make something change from an elementary substance to a compound? What happens to particle motion when particles are heated?

			What happens to gas pressure when particles are heated? Why does water expand when frozen? What are reactants? What are products? How do you find the average speed of a set of molecules?
Unit/Chapter/Selection of Study Matter and Interactions	**Approx # of weeks - % of time** 9 weeks (starts in the 3rd nine weeks and continues into 4th nine weeks)	**PA STEELS Standards** 3.2.5.A Develop a model to describe that matter is made of particles too small to be seen. 3.2.5.B Make and communicate observations and measurements to identify materials based on their properties. 3.2.5.C Interpret and analyze data to make decisions about how to utilize materials based on their properties. 3.2.5.D Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter	**Clarifying Statement and Assessment Boundary** 3.2.5.A Clarifying Statement: Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water. 3.2.5.A Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles. 3.2.5.B Clarifying Statement:

		is conserved. 3.2.5.E Conduct an investigation to determine whether the mixing of two or more substances results in new substances. 3.5.3-5.W Describe the properties of different materials. 3.5.3-5.M Demonstrate essential skills of the engineering design process. 3.5.3-5.P Evaluate the strengths and weaknesses of existing design solutions, including their own solutions. 3.5.3-5.Q Practice successful design skills. 3.5.3-5.R Apply tools, techniques, and materials in a safe manner as part of the design process. 3.5.3-5.S Illustrate that there are multiple approaches to design. 3.5.3-5.T Apply universal principles and elements of design. 3.5.3-5.U Evaluate designs based on	Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property. 3.2.5.B Assessment Boundary: Assessment does not include density or distinguishing mass and weight. 3.2.5.C Clarifying Statement: N/A 3.2.5.C Assessment Boundary: N/A 3.2.5.D Clarifying Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances. 3.2.5.D Assessment Boundary: Assessment does not include distinguishing mass and weight. 3.2.5.E Clarifying Statement: N/A

		criteria, constraints, and standards. 3.5.3-5.V Interpret how good design improves the human condition.	3.2.5.E Assessment Boundary: N/A 3.5.3-5.W Clarifying Statement: Students should understand the difference between natural and human-made materials and their basic properties. For example, wood, stone, metal, glass, and concrete are hard and dense; leather, paper, and some metals are flexible; glass and some plastics are transparent. Some materials conduct heat and electricity while others insulate to stop or delay transmission of heat or electricity. The properties of a specific material determine whether it is suitable for a given application. 3.5.3-5.W Assessment Boundary: N/A 3.5.3-5.M Clarifying Statement: Young children identify that there are some essential skills, such as creative thinking, building, and testing, that are required to succeed in technology and engineering design. 3.5.3-5.M Assessment Boundary:

			N/A 3.5.3-5.P Clarifying Statement: Students can evaluate a range of potential solutions by analyzing their relative strengths and weaknesses. Using criteria and constraints, students acknowledge the limitations caused by one solution and continue to explore a range of ideas. 3.5.3-5.P Assessment Boundary: N/A 3.5.3-5.Q Clarifying Statement: Continued opportunities to experience and develop essential design skills will improve students' design experiences. Students engage in developmentally appropriate experiences to develop these essential skills, which will often be teacher-driven. 3.5.3-5.Q Assessment Boundary: N/A 3.5.3-5.R Clarifying Statement: Students understand that designers practice the making skills necessary to successfully complete a design.

			Continued opportunities to explore tools, techniques, and materials will result in refining the skills necessary to successfully design. Students can begin to select appropriate tools and materials for an identified purpose. 3.5.3-5.R Assessment Boundary: N/A 3.5.3-5.S Clarifying Statement: Design approaches are determined by the context, the individual, the available resources, and the intended purpose of the design. 3.5.3-5.S Assessment Boundary: N/A 3.5.3-5.T Clarifying Statement: Students develop the necessary vocabulary to identify, describe, and begin to apply the principles and elements of design. Students can appreciate the impact of these principles and elements on design quality. 3.5.3-5.T Assessment Boundary: N/A 3.5.3-5.U Clarifying Statement:

			Students in this grade band develop an appropriate vocabulary to identify and discuss design parameters or requirements. They can recognize that purposeful design decisions are based on criteria and constraints. 3.5.3-5.U Assessment Boundary: N/A 3.5.3-5.V Clarifying Statement: Students expand their scope of understanding by identifying wants and needs associated with the human condition beyond their immediate surroundings. Students recognize the potential impacts of design on the quality of life. 3.5.3-5.V Assessment Boundary: N/A

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Big Idea(s) for 4th nine weeks	Concept(s) of 4th nine weeks	Competencies of 4th nine weeks	Essential Questions for 4th nine weeks
Fossil fuels are nonrenewable. Human activities in agriculture, industry, and everyday life have had positive and negative impacts on the land, rivers, oceans, and air. Technology continuously changes the way we design and create.	Students will know… ● natural energy sources ● the environmental and social impacts of design solutions ● technological products ● energy sources ● renewable and nonrenewable sources ● which foil boat style holds the most mass ● designs and recreations based on observations ● the best design after class observation ● how relationships cause decisions	Students will be able to… ● evaluate natural energy sources ● explain the environmental and social impacts of design solutions ● communicate ideas about technological products ● list pros and cons of energy sources ● classify sources as renewable or nonrenewable ● design a foil boat to hold the most mass, focusing on the mass/volume relationship (density) ● evaluate designs and recreate them based on observations ● identify the best design after class observation ● evaluate how relationships cause decisions	How do humans positively use and waste water, fuel, food, land, and recreation? What are the three main fossil fuels? What are two examples of renewable energy sources? What are two or more examples of nonrenewable energy sources? What two factors impact density? How does economic, political, and/or cultural views impact decisions regarding environmental issues? How has technology impacted the use of energy? What is the design process of creating a product?

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
5th Grade Science Curriculum Framework
Full Year Course

Unit/Chapter/Selection of Study	Approx # of weeks - % of time	PA STEELS Standards	Clarifying Statement and Assessment Boundary
Matter and Interactions	1 week (continues from 3rd nine weeks)	3.2.5.A Develop a model to describe that matter is made of particles too small to be seen. 3.2.5.B Make and communicate observations and measurements to identify materials based on their properties. 3.2.5.C Interpret and analyze data to make decisions about how to utilize materials based on their properties. 3.2.5.D Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. 3.2.5.E Conduct an investigation to determine whether the mixing of two or more substances results in new substances. 3.5.3-5.W Describe the properties of different materials.	3.2.5.A Clarifying Statement: Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water. 3.2.5.A Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles. 3.2.5.B Clarifying Statement: Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property. 3.2.5.B Assessment Boundary:

		3.5.3-5.M Demonstrate essential skills of the engineering design process. 3.5.3-5.P Evaluate the strengths and weaknesses of existing design solutions, including their own solutions. 3.5.3-5.Q Practice successful design skills. 3.5.3-5.R Apply tools, techniques, and materials in a safe manner as part of the design process. 3.5.3-5.S Illustrate that there are multiple approaches to design. 3.5.3-5.T Apply universal principles and elements of design. 3.5.3-5.U Evaluate designs based on criteria, constraints, and standards. 3.5.3-5.V Interpret how good design improves the human condition.	Assessment does not include density or distinguishing mass and weight. 3.2.5.C Clarifying Statement: N/A 3.2.5.C Assessment Boundary: N/A 3.2.5.D Clarifying Statement: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances. 3.2.5.D Assessment Boundary: Assessment does not include distinguishing mass and weight. 3.2.5.E Clarifying Statement: N/A 3.2.5.E Assessment Boundary: N/A 3.5.3-5.W Clarifying Statement: Students should understand the difference between natural and human-made materials and their basic properties. For example, wood, stone, metal, glass, and concrete are hard and dense; leather, paper, and some metals are flexible; glass and some plastics are

			transparent. Some materials conduct heat and electricity while others insulate to stop or delay transmission of heat or electricity. The properties of a specific material determine whether it is suitable for a given application. 3.5.3-5.W Assessment Boundary: N/A 3.5.3-5.M Clarifying Statement: Young children identify that there are some essential skills, such as creative thinking, building, and testing, that are required to succeed in technology and engineering design. 3.5.3-5.M Assessment Boundary: N/A 3.5.3-5.P Clarifying Statement: Students can evaluate a range of potential solutions by analyzing their relative strengths and weaknesses. Using criteria and constraints, students acknowledge the limitations caused by one solution and continue to explore a range of ideas.

			3.5.3-5.P Assessment Boundary: N/A 3.5.3-5.Q Clarifying Statement: Continued opportunities to experience and develop essential design skills will improve students' design experiences. Students engage in developmentally appropriate experiences to develop these essential skills, which will often be teacher-driven. 3.5.3-5.Q Assessment Boundary: N/A 3.5.3-5.R Clarifying Statement: Students understand that designers practice the making skills necessary to successfully complete a design. Continued opportunities to explore tools, techniques, and materials will result in refining the skills necessary to successfully design. Students can begin to select appropriate tools and materials for an identified purpose. 3.5.3-5.R Assessment Boundary: N/A

			3.5.3-5.S Clarifying Statement: Design approaches are determined by the context, the individual, the available resources, and the intended purpose of the design. 3.5.3-5.S Assessment Boundary: N/A 3.5.3-5.T Clarifying Statement: Students develop the necessary vocabulary to identify, describe, and begin to apply the principles and elements of design. Students can appreciate the impact of these principles and elements on design quality. 3.5.3-5.T Assessment Boundary: N/A 3.5.3-5.U Clarifying Statement: Students in this grade band develop an appropriate vocabulary to identify and discuss design parameters or requirements. They can recognize that purposeful design decisions are based on criteria and constraints. 3.5.3-5.U Assessment Boundary: N/A 3.5.3-5.V Clarifying Statement: Students expand their scope of understanding by identifying wants

			and needs associated with the human condition beyond their immediate surroundings. Students recognize the potential impacts of design on the quality of life. 3.5.3-5.V Assessment Boundary: N/A
Unit/Chapter/Selection of Study Energy/Human Interactions	**Approx # of weeks - % of time** 8 weeks	**PA STEELS Standards** 3.5.3-5.EE Explain how solutions to problems are shaped by economic, political, and cultural forces. 3.4.3-5.F Critique ways that people depend on and change the environment. 3.4.3-5.B Make a claim about the environmental and social impacts of design solutions and civic actions, including their own actions. 3.5.3-5.B Examine information to assess the trade-offs to using a product or system. 3.5.3-5.H Determine factors that influence changes in a society's technological systems or infrastructure.	**Clarifying Statement and Assessment Boundary** 3.5.3-5.EE Clarifying Statement: For example, the interests, desires, and financial resources of a group of people will influence the type of transportation system developed for that community. A transportation system for a large city may rely on mass transit, while one in a smaller town might rely on personal vehicles. 3.5.3-5.EE Assessment Boundary: N/A 3.4.3-5.F Clarifying Statement: 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.

			3.4.3-5.F Assessment Boundary: N/A 3.4.3-5.B Clarifying Statement: 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). 3.4.3-5.B Assessment Boundary: N/A 3.5.3-5.B Clarifying Statement: To assess technologies, information such as cost, function, durability, and warranties could be collected on products such as toys, food, games, health products, school supplies, and clothes to assess the costs, benefits, and trade-offs of these products or systems. 3.5.3-5.B Assessment Boundary: N/A 3.5.3-5.H Clarifying Statement: Individual, family, and community values as well as environmental and economic factors may expand or limit the development of technologies. Students should recognize that products and systems are designed

			and marketed for a variety of purposes, including to generate profit. Sometimes these changes come at the expense of human and environmental health. 3.5.3-5.H Assessment Boundary: N/A