Oxford Area School District Science Scope and Sequence - Quarter 1:

Grade K

3.1.1.A

Organisms and cells

- Identify the similarities and differences of living and nonliving things.

3.1.B

Genetics

- Observe and describe how young animals resemble their parent and other animals of the same kind

4.1.

Ecology

- Observe and describe what happens to living things when needs are met.
- Identify how the changes of seasons affect their local environment.

4.4

Agriculture and Society

- Identify common plants and animals found in PA agricultural system
- Identify common plants and animals used by people
- Observe and describe stages of life cycles for plants and animals
- Identify tools and machinery commonly used in agriculture

Oxford Area School Science Scope and Sequence – Quarter 2:

Grade K

3.1.A Biological Science	• Observe, compare, and describe stages of life cycles for plants and/or animals • Observe and describe structures and behaviors of a variety of common animals. • Observe and describe structures and behaviors of a variety of common animals.
3.1.C Evolution	• Describe changes animals and plants undergo throughout the seasons
3.2.A Chemistry	• Identify and classify objects by observable properties of matter. Compare different kinds of materials and discuss their uses. • Describe the way matter can change. • Constancy and Change Recognize that everything is made of matter
3.2.B Physics	• Describe how temperature can affect the body • Energy Recognize that light from the sun is an important source of energy for living and nonliving systems and some source of energy is needed for all organisms to stay alive and grow

Oxford Area School District Science Scope and Sequence – Quarter 3:

Grade K

4.3.1 Natural Resources

- Identify some renewable resources used in the classroom
- Recognize the importance of conserving natural resources

4.5 Humans and Environment

- Identify what people use in their everyday life
- Identify common pests in our homes, gardens, and neighborhoods
- Identify different types of pollution(land, air, or water) and their sources
- Identify waste and practice ways to reduce, reuse, and recycle

4.5.1 Humans and the Environment

- Identify resources humans use from the environment
- Describe why people consider some insects, plants and other living things to be pests, and ways to control their population numbers.
- Describe how pollution affects the health of a habitat
- Identify where the waste from home, school and community go for disposal.

Oxford Area School District Science Scope and Sequence – Quarter 4:

Grade K

3.3.A
Earth Structure, Processes and Cycles

- Distinguish between three types of earth materials-rock, soil, and sand
- Identify sources of water for human consumption and use
- Record daily weather conditions using simple charts and graphs. Identify seasonal changes in the environment **(year long)**

4.2
Watersheds and Wetlands

- Identify components of a water cycle
- Differentiate between terrestrial, aquatic, and wetland ecosystems in Pennsylvania
- Identify that there are living and nonliving components in an aquatic habitat

Science Curriculum - Grade K			
Big Idea Living things depend on their habitat to meet their basic needs.			
Essential Question What is the role of the habitat in providing the basic needs of an organism?		**Standards 3.1.A, 4.1, 4.2**	
Concepts	**Competencies**	**Resources**	**Assessments**
All living things have basic needs: food, space, shelter and water in an arrangement suitable for survival.	Identify the basic needs of living things in a habitat.	HMH Into Science	
Living things find their basic needs in their habitat.	Given a plant or animal, identify its preferred food, water source, shelter, space and how its habitat provides these needs in a suitable arrangement	HMH Into Science	
Living things are associated with specific habitats. (i.e. rabbits live in fields but could not survive in an ocean)	Describe one major habitat in PA (e.g. wetland, forest, field, river/lake/creek, urban/suburban) and identify many of the associated living and non-living components.	HMH Into Science	
There are many different species of organisms that live and interact within a habitat.	Describe one major habitat in PA (e.g. wetland, forest, field, river/lake/creek, urban/suburban) and identify many of the associated living and non-living components.	HMH Into Science	

Living livings depend on other living and non-living components within a habitat.	Given a plant or animal, identify its preferred food, water source, shelter, space and how its habitat provides these needs in a suitable arrangement	HMH Into Science	
Vocabulary habitat, wetland, forest, field, creek, river, lake			

Science Curriculum – Grade K			
Big Idea: Aquatic, terrestrial, and human-made ecosystems consist of diverse living and non-living components that change over time and among geographic areas.			
Essential Question: What are the living and non-living parts of ecosystems that exist within our community (or our school?) and what can cause them to change over time?		**Standards3.1.A, 3.1.B, 3.1.C, 4.1, 4.2**	
Concepts	**Competencies**	**Resources**	**Assessments**
PA experiences four seasonal climate changes: spring, summer, fall, winter.	Identify an animal or plant and list the effects of seasonal change on that organism.	HMH Into Science	
Organisms (plants and animals) respond to seasonal changes (i.e. growth patterns, dormancy and hibernation, migration).	Identify an animal or plant and list the effects of seasonal change on that organism.	HMH Into Science	
Plants and animals develop according to the species' life cycle.	Describe the life cycle of a given plant and a given animal.	HMH Into Science	

After a living organism dies it decomposes and becomes a nutrient source or natural resource.	Describe the life cycle of a given plant and a given animal.	HMH Into Science	
After a living organism dies it decomposes and becomes a nutrient source or natural resource.	Create a graphic representation of a food chain in a local ecosystem.	HMH Into Science	
Water can be flowing or still within an ecosystem.	Locate three bodies of water within your community, categorize each as flowing or still, and identify the purpose of each within the ecosystem.	HMH Into Science	
Water moves through an ecosystem in a dynamic manner (i.e. water cycle).	Describe the three phases of water and give an example of each within a local ecosystem.	HMH Into Science	
Living and non-living components of an ecosystem are interdependent.	Locate three bodies of water within your community, categorize each as flowing or still, and identify the purpose of each within the ecosystem.	HMH Into Science	
Living and non-living components of an ecosystem are interdependent.	Create a graphic representation of a food chain in a local ecosystem.	HMH Into Science	

Living and non-living components of an ecosystem are interdependent.	Create a graphic representation of how an organism depends on living and non-living components in its environment.	HMH Into Science	
Change in an ecosystem may cause organisms to become extinct when one or more of their needs can no longer be met.	Create a graphic representation of a food chain in a local ecosystem.	HMH Into Science	
Vocabulary Ecosystem, interdependent, food chain, organism, life cycle			

Science Curriculum - Grade K			
Big Idea The survival of living things is dependent upon their adaptations and ability to respond to natural changes in and human influences on the environment.			
Essential Question **How does an adaptation help an organism to survive and what happens when it cannot adapt to changes in its environment?**		**Standards 4.4, 4.5**	
Concepts	**Competencies**	**Resources**	**Assessments**
Animals and plants have physical adaptations that enable them to survive in their habitat (e.g., physical: shape of beak, position of eyes on head, thickness offur or fat, flat leaf vs. needle).	Explain how the adaptations of three different animal and/or plant species help the organisms to survive in their habitat(s) (e.g. fur, feathers, web feet; butterfly proboscis; camouflage; seed dispersal).	HMH Into Science	

When habitat changes it affects living things.	Describe how living things are affected when their habitat changes. (e.g., changes occur in food, water, shelter, space).	HMH Into Science	
Vocabulary adaptation, camouflage, web feet, seed dispersal			

Science Curriculum - Grade K			
Big Idea Humans depend upon the management and practices of agricultural systems.			
Essential Question How does agriculture play a role in our everyday lives?		**Standards 4.3**	
Concepts	**Competencies**	**Resources**	**Assessments**
Agriculture provides for many of the basic needs of humans and animals.	Identify the basic needs of humans and animals that are met by agricultural industry.	HMH Into Science	
Agriculture provides for many of the basic needs of humans and animals.	Compare and contrast how agriculture influences the food, clothing, shelter and customs of two different cultures.	HMH Into Science	
Agriculture provides for many of the basic needs of humans and animals.	Where does your lunch come from? Trace it back to its origins.	HMH Into Science	

Agriculture provides for many of the basic needs of humans and animals.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Without sound agricultural practices, we would not be able to feed people.	Identify methods farmers may use to protect waterways and land.	HMH Into Science	
Without sound agricultural practices, we would not be able to feed people.	Compare and contrast how agriculture influences the food, clothing, shelter and customs of two different cultures.	HMH Into Science	
Without sound agricultural practices, we would not be able to feed people.	What makes a pest a pest? Explain three different ways to control plant and animal pests.	HMH Into Science	
Food, clothing and some shelter are provided through agricultural practices.	Identify the basic needs of humans and animals that are met by agricultural industry.	HMH Into Science	
Food, clothing and some shelter are provided through agricultural practices.	Identify common farm crops (e.g. sweet and field corn, soybeans, wheat, mushrooms, grapes), farm animals (e.g., dairy and beef cows; sheep; swine; poultry), and common items grown in gardens for food (e.g. tomatoes, squash,	HMH Into Science	

	peppers) in Pennsylvania.		
Food, clothing and some shelter are provided through agricultural practices.	Compare and contrast how agriculture influences the food, clothing, shelter and customs of two different cultures.	HMH Into Science	
Food, clothing and some shelter are provided through agricultural practices.	Where does your lunch come from? Trace it back to its origins.	HMH Into Science	
Food, clothing and some shelter are provided through agricultural practices.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Pennsylvania farmers raise and grow specific animals and plants in order to meet our basic needs and wants.	Identify the basic needs of humans and animals that are met by agricultural industry.	HMH Into Science	
Pennsylvania farmers raise and grow specific animals and plants in order to meet our basic needs and wants.	Identify common farm crops (e.g. sweet and field corn, soybeans, wheat, mushrooms, grapes), farm animals (e.g., dairy and beef cows; sheep; swine; poultry), and common items grown in gardens for food (e.g. tomatoes, squash,	HMH Into Science	

	peppers) in Pennsylvania.		
Pennsylvania farmers raise and grow specific animals and plants in order to meet our basic needs and wants.	Compare and contrast how agriculture influences the food, clothing, shelter and customs of two different cultures.	HMH Into Science	
Pennsylvania farmers raise and grow specific animals and plants in order to meet our basic needs and wants.	Where does your lunch come from? Trace it back to its origins.	HMH Into Science	
Pennsylvania farmers raise and grow specific animals and plants in order to meet our basic needs and wants.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Animals can provide both food and clothing.	Identify the basic needs of humans and animals that are met by agricultural industry.	HMH Into Science	
Animals can provide both food and clothing.	Identify common farm crops (e.g. sweet and field corn, soybeans, wheat, mushrooms, grapes), farm animals (e.g., dairy and beef cows; sheep; swine; poultry), and common items grown in gardens for food (e.g. tomatoes, squash,	HMH Into Science	

	peppers) in Pennsylvania.		
Animals can provide both food and clothing.	Compare and contrast how agriculture influences the food, clothing, shelter and customs of two different cultures.	HMH Into Science	
Animals can provide both food and clothing.	Where does your lunch come from? Trace it back to its origins.	HMH Into Science	
Animals can provide both food and clothing.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Agriculture-related businesses and individuals implement practices that care for the land and the water.	Identify methods farmers may use to protect waterways and land.	HMH Into Science	
The agricultural industry is more than farming, and provides a lot of jobs in Pennsylvania.	Where does your lunch come from? Trace it back to its origins.	HMH Into Science	

The agricultural industry is more than farming, and provides a lot of jobs in Pennsylvania.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Animals can provide both food and clothing.	Are you wearing clothing from a plant and/or animal source? Trace it back to its origins.	HMH Into Science	
Homeowners and farmers can control pests while being environmentally friendly (integrated pest management).	Identify methods farmers may use to protect waterways and land.	HMH Into Science	
Homeowners and farmers can control pests while being environmentally friendly (integrated pest management).	What makes a pest a pest? Explain three different ways to control plant and animal pests.	HMH Into Science	
Vocabulary agricultural industry, agriculture, crops			

Science Curriculum – Grade K			
Big Idea: Sustainable use of natural resources is essential to provide for the needs and wants of all living things now and in the future.			
Essential Question: Why is it important to conserve both renewable and non-renewable resources?		**Standards 3.2, 4.3**	
Concepts	**Competencies**	**Resources**	**Assessments**

All living things rely on natural resources for survival (including people)	Explain how plants, animals use natural resources for their survival.	HMH Into Science	
All living things rely on natural resources for survival (including people)	Explain how you and others in your class use natural resources in your daily lives.	HMH Into Science	
All living things rely on natural resources for survival (including people)	Explain why it is important to conserve natural resources.	HMH Into Science	
All living things survive by meeting their needs: needs are necessary for survival; wants are not.	Explain how plants, animals use natural resources for their survival.	HMH Into Science	
All living things survive by meeting their needs: needs are necessary for survival; wants are not.	Explain how you and others in your class use natural resources in your daily lives.	HMH Into Science	
All living things survive by meeting their needs: needs are necessary for survival; wants are not.	21. Explain the difference between needs and wants and give examples of each.	HMH Into Science	

All living things survive by meeting their needs: needs are necessary for survival; wants are not.	Explain why it is important to conserve natural resources.	HMH Into Science	
Humans use and consume the Earth's natural resources daily.	Explain how plants, animals use natural resources for their survival.	HMH Into Science	
Humans use and consume the Earth's natural resources daily.	Explain how you and others in your class use natural resources in your daily lives.	HMH Into Science	
Humans use and consume the Earth's natural resources daily.	Explain why it is important to conserve natural resources.	HMH Into Science	
Humans use and consume the Earth's natural resources daily.	List ways that you and others can conserve natural resources.	HMH Into Science	
Humans can conserve some natural resources, so that these resources can be sustained for the future.	Explain why it is important to conserve natural resources.	HMH Into Science	

There are laws that help to conserve natural resources.	Explain why it is important to conserve natural resources.	HMH Into Science	
There are laws that help to conserve natural resources.	List ways that you and others can conserve natural resources.	HMH Into Science	
Vocabulary natural resources, conserve, renewable, non-renewable resources, survival, needs, wants, consume, laws			

Science Curriculum - Grade K			
Big Idea The health of all living things is directly related to the quality of the environment.			
Essential Question **How does the quality of the environment affect the health of living things?**		**Standards 4.5**	
Concepts	**Competencies**	**Resources**	**Assessments**
Plants, animals and humans need air and water to survive.	Explain how living and non-living things affect one another.	HMH Into Science	
Plants, animals and humans need air and water to survive.	Describe how water, air and soil affect living things.	HMH Into Science	

Living and non-living components of the ecosystem affect each other.	Explain how living and non-living things affect one another.	HMH Into Science	
Living and non-living components of the ecosystem affect each other.	Describe how water, air and soil affect living things.	HMH Into Science	
Health can be affected by things in air, water or soil.	Explain how living and non-living things affect one another.	HMH Into Science	
Health can be affected by things in air, water or soil.	Describe how water, air and soil affect living things.	HMH Into Science	
Health can be affected by things in air, water or soil.	Describe how the health of living things is affected by the quality of water, air and soil.	HMH Into Science	
Humans may have a positive or negative impact on environmental health (e.g. pollution; cleanup programs).	Describe how the health of living things is affected by the quality of water, air and soil.	HMH Into Science	

Humans may have a positive or negative impact on environmental health (e.g. pollution; cleanup programs).	Describe positive and negative impacts of humans on the ecosystem.	HMH Into Science	
Vocabulary environment, plants, animals, humans, environmental health, pollution, impact			

Science Curriculum - Grade K			
Big Idea: People acting individually and/ or as groups influence the environment.			
Essential Question: How do human actions affect the health of air, water, and land?		**Standards 4.3, 4.4, 4.5**	
Concepts	**Competencies**	**Resources**	**Assessments**
Human activities affect the environment on a daily basis.	List examples of everyday human activities and describe how they affect the environment (positively or negatively).	HMH Into Science	
Human activities affect the environment on a daily basis.	Describe ways that people pollute the environment. What are some of the consequences of pollution?	HMH Into Science	
Human activities affect the environment on a daily basis.	Identify items that can be reduced, recycled, reused and refused in the local community, the school and the classroom.	HMH Into Science	

Human activities affect the environment on a daily basis.	Identify actions that can be taken by you, and others, to help the environment.	HMH Into Science	
These effects can be positive or negative	List examples of everyday human activities and describe how they affect the environment (positively or negatively).	HMH Into Science	
These effects can be positive or negative	Describe ways that people pollute the environment. What are some of the consequences of pollution?	HMH Into Science	
These effects can be positive or negative	Identify items that can be reduced, recycled, reused and refused in the local community, the school and the classroom.	HMH Into Science	
These effects can be positive or negative	Identify actions that can be taken by you, and others, to help the environment.	HMH Into Science	
Individuals and groups can choose actions that positively influence the environment (pollution, recycling, reduce, reuse).	List examples of everyday human activities and describe how they affect the environment (positively or negatively).	HMH Into Science	

Individuals and groups can choose actions that positively influence the environment (pollution, recycling, reduce, reuse).	Describe ways that people pollute the environment. What are some of the consequences of pollution?	HMH Into Science	
Individuals and groups can choose actions that positively influence the environment (pollution, recycling, reduce, reuse).	Identify items that can be reduced, recycled, reused and refused in the local community, the school and the classroom.	HMH Into Science	
Individuals and groups can choose actions that positively influence the environment (pollution, recycling, reduce, reuse).	Identify actions that can be taken by you, and others, to help the environment.	HMH Into Science	
Vocabulary air, water, land, recycled, reused, refused, pollution, recycling, reduce, reuse			

Science Curriculum - Grade K			
Big Idea Environmental laws and regulations impact humans, the environment, and the economy in both positive and negative ways.			
Essential Question **Why do people create laws, and how do they impact the way we interact with the environment?**		**Standards4.3, 4.5**	
Concepts	**Competencies**	**Resources**	**Assessments**

Environmental laws and regulations exist (e.g., recycling, endangered species, etc.)	Give examples of local, state or federal laws that protect living and/or non-living things in the environment.	HMH Into Science	
Environmental laws and regulations exist (e.g., recycling, endangered species, etc.)	Explain why people create laws.	HMH Into Science	
Environmental laws and regulations exist (e.g., recycling, endangered species, etc.)	Explain how a specific environmental law (e.g. littering law; recycling) affects your everyday life.	HMH Into Science	
People create laws and regulations to protect the living components (i.e. wildlife, plants) and non-living components (e.g., water, soil) of the environment.	Give examples of local, state or federal laws that protect living and/or non-living things in the environment.	HMH Into Science	
People create laws and regulations to protect the living components (i.e. wildlife, plants) and non-living components (e.g., water, soil) of the environment.	Explain why people create laws.	HMH Into Science	
These laws and regulations affect how we live our everyday lives.	Give examples of local, state or federal laws that protect living and/or non-living things in the environment.	HMH Into Science	

These laws and regulations affect how we live our everyday lives.	Explain why people create laws.	HMH Into Science	
These laws and regulations affect how we live our everyday lives.	Explain how a specific environmental law (e.g. littering law; recycling) affects your everyday life.	HMH Into Science	
Vocabulary laws, regulations, environment, economy, endangered species, wildlife			

Science Curriculum - Grade K			
Big Idea **The properties of matter can undergo changes.**			
Essential Question **What are the properties of matter and how do they change?**		**Standards** **3.2.A**	
Concepts	**Competencies**	**Resources**	**Assessments**
All matter has properties that can change.	Describe basic changes to properties of matter.	HMH Into Science	
All matter has properties that can change.	Distinguish between reversible and non-reversible changes that matter can undergo.	HMH Into Science	

Vocabulary
properties, matter, reversible, non-reversible changes