



Farmer in the Classroom

Winter Workshops

NYC Science Scope & Sequence Standards Connections

City Growers empowers young people to envision a greener and healthier future. We aim to close a fundamental gap in the experience of urban children by creating opportunities for them to meaningfully interact with the natural world and reconnect with food's origin from the earth. We want to see more green roofs, more community gardens, more urban farms, equal access to healthy food, cleaner air and waterways, and more innovative urban spaces to grow and learn. It is our duty and honor to provide today's children the tools and inspiration they need to change the world tomorrow.

While farmers are forced to take the winter off, City Growers is able to provide additional opportunities for NYC youth to dig deeper into the environmental sciences. When a City Growers Farmer-Educator enters an NYC classroom, our hands-on, inquiry-based educational programs transform the classroom into a learning laboratory. This document provides NYC educators with the standards they can expect to meet when welcoming City Growers into their classroom. Within [The Enhanced NYC Science Scope and Sequence](#)* 2015-2016, educators will also be able to match each unit to:

- ❖ The New York State Science Standards
- ❖ The New York State Learning Standards for Mathematics, Science and Technology
- ❖ The Next Generation Science Standards
- ❖ The Common Core State Standards as they connect to Language Arts and Mathematics
- ❖ The Environmental Guidelines for Learning

City Growers is proud to provide programming aligned with the highest standards of learning.

*The Enhanced NYC Science Scope and Sequence can be found online at:

http://schools.nyc.gov/NR/rdonlyres/949E0441-ADAF-445C-A915-E9F8123E1387/0/SciencescopeandsequenceK5_v13_WEB.pdf or simply search for NYC Science Scope and Sequence 2015 using your favorite search engine.

www.citygrowers.org

City Growers connects urban communities with agriculture, food, and environment through farm education and advocacy in order to foster a culture of health and sustainability.



Farmer in the Classroom

Kindergarten		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	Unit 1: How do plants respond to environmental changes? Unit 2: How do we observe and describe objects and the physical properties of objects? Unit 3: How can we compare and contrast animals and nonliving things?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development. LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.
Honey Bee Education	Unit 1: How do plants respond to environmental changes? Unit 2: How do we observe and describe objects and the physical properties of objects? Unit 3: How can we compare and contrast animals and nonliving things?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development. LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.

Grade 1		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	Unit 1: How are animals alike and different?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development.
Honey Bee Education	Unit 1: How are animals alike and different? Unit 2: How do we describe the properties of matter?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development. PS. Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.



Farmer in the Classroom

Grade 2		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	Unit 1: How do different materials affect the makeup of the Earth? Unit 3: How are plants alike and different?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development. LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.
Honey Bee Education	Unit 3: How are plants alike and different?	LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things. LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring. LE. Key Idea 3: Individual organisms and species change over time. LE. Key Idea 4: The continuity of life is sustained through reproduction and development. LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.

<p style="margin: 0;">Grades K-2 Cross-Cutting Concepts*</p> <p style="margin: 5px 0 0 0;">*CC = Compost in the Classroom</p> <p style="margin: 5px 0 0 0;">*HB = Honey Bee Ed</p>	<p>Patterns: Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them. (CC, HB)</p> <p>Cause and Effect: Mechanism and Prediction: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering. (CC, HB)</p> <p>Systems and System Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems. (CC, HB)</p> <p>Energy and Matter: Flows, Cycles, and Conservation: Tracking energy and matter flows into, out of, and within systems helps one understand their system's behavior. (CC, HB)</p> <p>Structure and Function: The way an object is shaped or structured determines many of its properties and functions. (CC, HB)</p> <p>Stability and Change: For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand. (CC, HB)</p>
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Farmer in the Classroom

Grade 3		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	<p>Unit 1: How can we accurately describe the physical properties of matter?</p> <p>Unit 2: How does the use of various forms of energy affect our world?</p> <p>Unit 4: How can we best inform the community about creating and sustaining wildlife, pollinator, and food habitats in urban and suburban NYC communities?</p>	<p>PS. Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.</p> <p>PS. Key Idea 4: Energy exists in many forms, and when these forms change energy is conserved.</p> <p>LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.</p> <p>LE. Key Idea 3: Individual organisms and species change over time.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their environment.</p>
Honey Bee Education	<p>Unit 1: How can we accurately describe the physical properties of matter?</p> <p>Unit 2: How does the use of various forms of energy affect our world?</p> <p>Unit 4: How can we best inform the community about creating and sustaining wildlife, pollinator, and food habitats in urban and suburban NYC communities?</p>	<p>PS. Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.</p> <p>PS. Key Idea 4: Energy exists in many forms, and when these forms change energy is conserved.</p> <p>LE. Key Idea 2: Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.</p> <p>LE. Key Idea 3: Individual organisms and species change over time.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their environment.</p>



Farmer in the Classroom

Grade 4		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	<p>Unit 1: What are the interactions of animals and plants within an ecosystem?</p> <p>Unit 3: How do the properties of water affect living things and the natural environment?</p> <p>Unit 4: How do natural events affect our world?</p>	<p>LE. Key Idea 3: Individual organisms and species change over time.</p> <p>LE. Key Idea 4: The continuity of life is sustained through reproduction and development.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their environment.</p> <p>LE. Key Idea 7: Identify ways in which humans have changed their environment and the effects of those changes.</p> <p>PE. Key Idea 2: Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.</p> <p>PE. Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.</p> <p>PE. Key Idea 4: Energy exists in many forms, and when these forms change energy is conserved.</p>
Honey Bee Education	<p>Unit 1: What are the interactions of animals and plants within an ecosystem?</p> <p>Unit 3: How do the properties of water affect living things and the natural environment?</p> <p>Unit 4: How do natural events affect our world?</p>	<p>LE. Key Idea 3: Individual organisms and species change over time.</p> <p>LE. Key Idea 4: The continuity of life is sustained through reproduction and development.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their environment.</p> <p>LE. Key Idea 7: Identify ways in which humans have changed their environment and the effects of those changes.</p> <p>PE. Key Idea 2: Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.</p> <p>PE. Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.</p> <p>PE. Key Idea 4: Energy exists in many forms, and when these forms change energy is conserved.</p>



Farmer in the Classroom

Grade 5		
Winter Workshop	NYC Science Scope and Sequence 2015-2016	
	Essential Questions	Key Ideas
Compost in the Classroom	<p>Unit 1: How do scientists gather, use, and share information? How do scientists think and work? How do scientists investigate the natural world? Why inquire? How can we use data to support a claim?</p> <p>Unit 2: What are the processes that help shape the land? What changes affect landforms? How can we use patterns to predict changes on the surface of the Earth?</p> <p>Unit 3: How does nutrition and exercise affect our health? What is a healthy food choice?</p> <p>Unit 4: How are plants and animals in an ecosystem connected?</p>	<p>SI. Key Idea 1: The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.</p> <p>SI. Key Idea 2: Beyond the use of reasoning and consensus, scientific inquiry involves the testing of proposed explanations involving the use of conventional techniques and procedures and usually requiring considerable ingenuity.</p> <p>SI. Key Idea 3: The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.</p> <p>LE. Key Idea 4: The continuity of life is sustained through reproduction and development.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their physical environment.</p> <p>LE. Key Idea 7: Human decisions and activities have had a profound impact on the physical and living environment.</p>
Honey Bee Education	<p>Unit 1: How do scientists gather, use, and share information? How do scientists think and work? How do scientists investigate the natural world? Why inquire? How can we use data to support a claim?</p> <p>Unit 3: How does nutrition and exercise affect our health? What is a healthy food choice?</p> <p>Unit 4: How are plants and animals in an ecosystem connected?</p>	<p>SI. Key Idea 3: The observations made while testing proposed explanations, when analyzed using conventional and invented methods, provide new insights into phenomena.</p> <p>LE. Key Idea 4: The continuity of life is sustained through reproduction and development.</p> <p>LE. Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.</p> <p>LE. Key Idea 6: Plants and animals depend on each other and their physical environment.</p> <p>LE. Key Idea 7: Human decisions and activities have had a profound impact on the physical and living environment.</p>

<p style="text-align: center;">Grades 3-5 Cross-Cutting Concepts*</p> <p>*CC = Compost in the Classroom</p> <p>*HB = Honey Bee Ed</p>	<p>Patterns: Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them. (CC, HB)</p> <p>Cause and Effect: Mechanism and Prediction: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering. (CC, HB)</p> <p>Systems and System Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems. (CC, HB)</p> <p>Scale, Proportion, and Quantity: In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change. (CC, HB)</p>
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