URBAN ADVANTAGE COURSE CATALOG

2025-2026

American Museum of Natural History

Bronx Zoo
A Wildlife Conservation Society Park

Brooklyn Botanic Garden

NYBG New York Botanical Garden

New York Aquarium
A Wildlife Conservation Society Park

nysci
New York Hall of Science

Queens Botanical Garden

ZOO Staten Island

NYC Public Schools

The Council of the City of New York

NYC Office of the Mayor

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urban advantage science initiative

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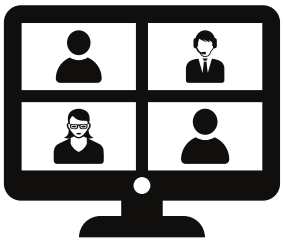
Course Formats & Definitions

All Urban Advantage Professional Learning will be held in the below formats or a combination of any of the below formats. We hope these formats will provide you with options that suit your learning preferences and schedule. In the course descriptions you will see the following terms used:

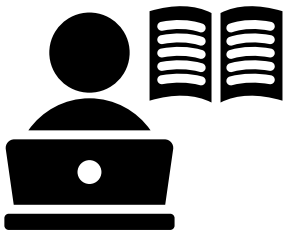
In-Person

Courses with this format require physically present attendance at one or more of our host institution(s) and/or location(s).



Synchronous (Sync)

Courses with this format require the use of an electronic device to attend one or more live session(s) via the videoconferencing platform Zoom.



Asynchronous (Async)

Courses with this format require the use of an electronic device for self-paced work to be submitted via the online learning platform Moodle through our myUA portal.

Note: For Synchronous and Asynchronous courses, we recommend using a computer rather than a phone due to compatibility issues of other applications we may use.

urban advantage science initiative

Host Institutions & Abbreviations

All Urban Advantage Professional Learning will be hosted by the institutions or a combination of institutions below. We hope these locations will provide you with options that suit your learning preferences and schedule. In the course descriptions you will see the following institutions used:

AMNH
American Museum of Natural History

BBG
Brooklyn Botanic Garden

BXZ
Bronx Zoo

NYA
New York Aquarium

NYBG
New York Botanical Garden

NYSCI
New York Hall of Science

QBG
Queens Botanical Garden

SIZ
Staten Island Zoo

Elementary Year 1

Course Goals

Foundational Concepts

Be introduced to goal-oriented discourse moves from Ambitious Science Teaching and articulate how these connect to the Science and Engineering Practices.

Exploration of Pedagogy

Understand that scientific explanations are created through iterative processes and are based on personal experience and the use of evidence.

Identify opportunities for students to revise initial explanations through exposure to new information.

Application and Reflection

Apply one or more strategies to support learners with constructing and revising evidence-based explanations.

Elementary Year 1

Title

Constructing and Revising Evidence-based Explanations

Description

Participants will study changes to local owl populations, through personal connections, first-hand experiences, hands-on investigations and text resources, to build and revise a scientific explanation. Participants will learn literacy strategies to help deepen students' understanding of science content and inquiry. Participants will reflect on their practice and modify argumentation tools (CER framework, KLEWS) for their classroom. They will identify opportunities for students to revise initial explanations through exposure to new information.

*This course is offered at three institutions.

Institution	NYA
Format	 In-Person

Dates	Times
Friday, 1/9/26	9:00 AM - 3:00 PM
Friday, 1/30/26	9:00 AM - 3:00 PM
Friday, 2/13/26	9:00 AM - 3:00 PM
Friday, 3/6/26	9:00 AM - 3:00 PM

Elementary Year 1

Institution	NYBG
Format	In-Person

In-Person Dates	Times
Sunday, 1/11/26	9:00 AM - 3:00 PM
Sunday, 2/1/26	9:00 AM - 3:00 PM
Sunday, 3/1/26	9:00 AM - 3:00 PM
Sunday, 3/22/26	9:00 AM - 3:00 PM

Institution	AMNH
Format	In-Person

Dates	Times
Wednesday, 1/21/26	9:00 AM - 3:00 PM
Wednesday, 2/11/26	9:00 AM - 3:00 PM
Tuesday, 3/10/26	9:00 AM - 3:00 PM
Tuesday, 3/31/26	9:00 AM - 3:00 PM

Elementary Year 2

Course Goals

Foundational Concepts

Recognize the importance of eliciting student ideas and honoring identities when shaping instruction.

Exploration of Pedagogy

Articulate how individual and collective sense-making helps strengthen students' understanding of relationships between ideas, representations, or explanations.

Recognize that scientific modeling is one way that scientists and students represent changes in systems to solve real-world issues.

Application and Reflection

Apply one or more scaffolds to support learners with revising initial models or explanations as they are exposed to new sources of information.

Elementary Year 2

Title

Supporting Ongoing Changes in Thinking

Description

Participants will learn how collective sense-making helps strengthen our understanding of phenomena we can observe in the world around us and recognize that there are multiple ways that scientists and students can help change real-world issues. Teachers will explore the impacts of erosion through investigations that highlight real world solutions to a globally shared problem. Participants will reflect on their practice through metacognition and create tools for students to engage in reflective practice in their classroom.

*This course is offered at two institutions.
**This course is also offered fully asynchronous, but will have limited seats.

Format

 Async  Sync  In-Person

Async Dates

Monday, 1/26/26 through Tuesday, 2/23/26

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Elementary Year 2

Institution		NYSCI
Dates	**Times**	**Format**
Saturday, 1/10/26	9:00 AM - 3:00 PM	In-Person
Saturday, 1/24/26 OR Tuesday, 1/27/26	9:00 AM - 2:00 PM	Async & Sync
Saturday, 1/31/26 OR Tuesday, 2/3/26	9:00 AM - 2:00 PM	Async & Sync
Saturday, 2/7/26	9:00 AM - 3:00 PM	In-Person

Institution		AMNH
Dates	**Times**	**Format**
Wednesday, 1/14/26	9:00 AM - 3:00 PM	In-Person
Saturday, 1/24/26 OR Tuesday, 1/27/26	9:00 AM - 2:00 PM	Async & Sync
Saturday, 1/31/26 OR Tuesday, 2/3/26	9:00 AM - 2:00 PM	Async & Sync
Thursday, 2/12/26	9:00 AM - 3:00 PM	In-Person

Elementary Year 3

Course Goals

Foundational Concepts

Understand how data can help scientists and students better understand the world.

Exploration of Pedagogy

Recognize the importance of students using and analyzing data to make and justify claims.

Articulate the role engaging in argument plays in helping scientists and students clarify claims and explanations.

Application and Reflection

Apply scaffolds to incorporate data analysis to support students in evaluating and communicating scientific concepts.

Format  Async  Sync  In-Person

Elementary Year 3

Title

Making and Justifying Claims in a Science Community

Description

Learn how scientists use evidence to make connections, recognize patterns, and develop and revise explanations about the natural world. By using UA institutional exhibitions and various types of data gathered from visualizations, infographics, pictures, and graphs, you will gain a deeper understanding of how the behavior, life cycle, and migration of Monarch Butterflies tell a story about human impact. Teachers will engage in a cycle of reflective practices around the class and PL work.

*This course is offered at two institutions.

Format

 Async  Sync  In-Person

Elementary Year 3

Institution		AMNH
Dates	**Times**	**Format**
Wednesday, 10/22/25	9:00 AM - 3:00 PM	In-Person
Wednesday, 11/19/25	9:00 AM - 3:00 PM	In-Person
Wednesday, 12/17/25	9:00 AM - 3:00 PM	In-Person
Sunday, 1/25/26 **OR**	9:00 AM - 11:30 AM	Sync
Wednesday, 1/28/26	4:00 PM - 6:30 PM	

Institution		BBG & AMNH
Dates	**Times**	**Format**
Sunday, 10/26/25	9:00 AM - 3:00 PM	In-Person
**Sunday, 11/16/25	9:00 AM - 3:00 PM	In-Person
Sunday, 12/14/25	9:00 AM - 3:00 PM	In-Person
Sunday, 1/25/26 **OR**	9:00 AM - 11:30 AM	Sync
Wednesday, 1/28/26	4:00 PM - 6:30 PM	

**This session will be held at AMNH.

Middle School Year 1

Course Goals

Foundations of Phenomena and Discourse

1) Teachers will identify the sets of core practices in AST, and describe some of the ways in which the routine practices of Ambitious Science Teaching support student learning in science over time.

2) Teachers will describe how specific discourse strategies can support different learning goals throughout a learning sequence using the AST talk moves taxonomy.

3) Teachers will apply one or more AST goal-oriented discourse strategies to strengthen students' ability to connect with and begin to explain a phenomenon.

4) Teachers will apply one or more community-building strategies that set up an environment that encourages sharing and values student identity.

Middle School Year 1

Topic(s)

Human-Wildlife Interactions

Description

Science stories are powerful societal narratives to teach about ecosystems, interdependence, culture, and history. Join us at the Bronx Zoo for 5 days that will deepen your understanding and implementation of ambitious science teaching (AST), phenomena-based instruction, and the use of discourse to promote equitable participation and enhance student learning in science. We will learn in the classroom and out in the zoo, visiting exhibits, engaging in hands-on activities, and working collaboratively to understand the interconnected roles of humans, other animals, plants and everything in between.

Institution BXZ

Format In-Person

In-Person Dates	Times
Friday, 10/17/25	9:00 AM - 3:30 PM
Friday, 10/24/25	9:00 AM - 3:30 PM
Friday, 10/31/25	9:00 AM - 3:30 PM
Friday, 11/7/25	9:00 AM - 3:30 PM
Friday, 11/14/25	9:00 AM - 3:30 PM

Middle School Year 1

Topic(s)

Watershed Ecology

Description

Participants will utilize the grounds of The New York Botanical Garden to investigate relationships between the biotic and abiotic factors that impact the ecology of the Bronx River watershed. We will hike through the forest and wade into the river (optional!) as we explore this local ecosystem and introduce teachers to data collection techniques in the field, including water quality testing, macroinvertebrate testing, and opportunities to use waders and kick nets. We will explore the past, present, and future of the Bronx River and its interactions with its surrounding ecological and human communities, with a focus on water quality factors. Teachers will engage in shared learning experiences and consider how the learning progression and strategies can be applied in their teaching practice. Teachers will also engage with research about how people learn, and ideas about culturally responsive-sustaining education in the context of learning about the natural world.

Institution NYBG

Format  In-Person

In-Person Dates	Times
Saturday, 10/25/25	9:00 AM - 4:00 PM
Saturday, 11/8/25	9:00 AM - 4:00 PM
Saturday, 11/22/25	9:00 AM - 4:00 PM
Saturday, 12/6/25	9:00 AM - 4:00 PM
Saturday, 12/13/25	9:00 AM - 4:00 PM

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Middle School Year 1

Topic(s)

Plant Responses

Description

Engaging with community issues, we'll explore the phenomenon of how shading caused by increased urban development affects plant growth. Participants will work in groups to design and carry out investigations of plant growth to gather evidence that can potentially support their explanations of the phenomenon. We'll utilize many science practices including asking questions, constructing explanations, planning and carrying out investigations, and engaging in argument from evidence. We will model strategies and techniques throughout to support teachers' development of questioning skills, inquiry methods, and discourse strategies. We will utilize garden grounds for immersive field learning.

Institution BBG

Format  In-Person

In-Person Dates	Times
Sunday, 10/26/25	9:00 AM - 4:00 PM
Sunday, 11/9/25	9:00 AM - 4:00 PM
Sunday, 11/16/25	9:00 AM - 4:00 PM
Sunday, 11/23/25	9:00 AM - 4:00 PM
Sunday, 12/14/25	9:00 AM - 4:00 PM

Middle School Year 1

Topic(s)

Forces of Motion

Description

This interactive experience immerses participants in phenomena-based learning, focusing on the wonder of flight. Aligned with NGSS and Ambitious Science Teaching, participants will engage in Science and Engineering Practices through their exploration of the forces of flight phenomena. Using background research and data collected from their straw rocket launches, participants will analyze the results to identify what makes the best straw rocket model. Participants will also learn strategies to encourage student thinking and discourse. Be prepared to launch into learning physical science concepts in a new and fun way!

Institution NYSCI

Format Async In-Person

In-Person Dates	Times
Sunday, 12/14/25	10:00 AM - 3:30 PM
Sunday, 12/21/25	10:00 AM - 3:30 PM
Sunday, 1/11/26	10:00 AM - 3:30 PM
Sunday, 1/25/26	10:00 AM - 3:30 PM
Sunday, 2/8/26	10:00 AM - 3:30 PM

urban advantage science initiative

Middle School Year 1

Topic(s)

Ecosystem Interactions

Description

Join us at the Staten Island Zoo to dive into the lives of some of the world's most misunderstood animals. Zoos feature many different species that are vital to the function of ecosystems from charismatic megafauna to creatures that inspire trepidation like cockroaches, snakes, and rats. In this course, participants will gain a deeper understanding of how wildlife adapt and thrive in urban environments, and how even the less “popular” species provide essential ecosystem services that benefit both other organisms and humans. Through hands-on modeling, observation, and investigation, we’ll explore animal adaptations, the importance of biodiversity, and the cascading effects that changes in the food web can create. Come with an open mind and leave with new strategies and techniques to bring phenomena-based learning to life in your classroom.

Institution SIZ

Format  In-Person

In-Person Dates	Times
Wednesday, 1/28/26	8:00 AM - 2:30 PM
Wednesday, 2/11/26	8:00 AM - 2:30 PM
Wednesday, 2/25/26	8:00 AM - 2:30 PM
Tuesday, 3/10/26	8:00 AM - 2:30 PM
Wednesday, 3/25/26	8:00 AM - 2:30 PM

*Snow date: Tuesday, 3/31/26

Middle School Year 1

Topic(s)

Adaptations and Animal Behavior

Description

Have you ever wondered why the fastest Olympic swimmer couldn't beat a shark in a race? Well we have, and we want to take you on an underwater journey at the New York Aquarium to understand how animals swim and why they function the way they do. We will spend 5 days learning in our classroom and in the aquarium, visiting exhibits, engaging in hands-on activities, and working collaboratively to understand why so many animals are faster than humans, and why that matters, in order to deepen your understanding and implementation of ambitious science teaching (AST), phenomena-based instruction, and the use of discourse to promote equitable participation and enhance student learning in science.

Institution NYA

Format In-Person

In-Person Dates	Times
Saturday, 1/31/26	9:00 AM - 3:30 PM
Saturday, 2/7/26	9:00 AM - 3:30 PM
Saturday, 2/21/26	9:00 AM - 3:30 PM
Saturday, 3/7/26	9:00 AM - 3:30 PM
Saturday, 3/14/26	9:00 AM - 3:30 PM

Middle School Year 1

Topic(s)

River Ecology

Description

Participants will utilize AMNH exhibits, field sites in Central Park and a Museum created web-based teaching case about Hudson River and the introduction of the zebra mussel. Through data collection in the field and using videos and readings about the research at the Cary Institute of Ecosystem Studies, participants will explore ecosystem dynamics and the practices of science. Participants will utilize a 20-year data set via a web-based graphing tool and connect their ecosystem understandings to nature in the city by visiting the Hudson River with the Billion Oyster Project.

Our teacher goals will focus on strategies for supporting student discourse, making thinking visible, supporting ongoing changes in thinking, using scientific models and connecting to the ecosystem we live in.

Institution

AMNH

Format

In-Person

In-Person Dates	Times
Saturday, 3/7/26	9:00 AM - 4:00 PM
Saturday, 3/14/26	9:00 AM - 4:00 PM
Saturday, 3/28/26	9:00 AM - 4:00 PM
Saturday, 4/18/26	9:00 AM - 4:00 PM
Saturday, 4/25/26	9:00 AM - 4:00 PM

Middle School Year 1

Topic(s)

Urbanization and Climate Change

Description

By interweaving scientific concepts and social realities, we will create a vivid picture of Flushing, which was once sprawling marshlands and now covered with urban sprawl. How has this urbanization affected the landscape and its people, especially in the face of increasing flash floods due to climate change? As we explore the compounding effects of colonization, climate change, and urban planning, we center local connections and diverse perspectives to plan a sustainable and inclusive future. We will explore the importance of interdisciplinary perspectives in science content and actively participate in building a learning community that reflects its members.

Institution QBG

Format  In-Person

In-Person Dates	Times
Wednesday, 4/22/26	9:00 AM - 3:30 PM
Wednesday, 4/29/26	9:00 AM - 3:30 PM
Wednesday, 5/6/26	9:00 AM - 3:30 PM
Wednesday, 5/13/26	9:00 AM - 3:30 PM
Wednesday, 5/20/26	9:00 AM - 3:30 PM

Middle School Year 2

Course Goals

Year 2 teachers are required to take one of each of the following courses.

Eliciting Ideas and Connections

1) Apply a routine or scaffold into a lesson that encourages students to publicly share initial models or explanations of phenomena

2) Identify opportunities for goal-oriented discourse moves to support eliciting ideas and strengthening learners' connections to prescribed phenomena

3) Recognize that scientific modeling is one way that scientists and students represent changes in systems to solve real world issues

4) Identify opportunities for strengthening modeling experiences with learners

Curriculum Topic Study (CTS)

1) Apply formative assessment strategies as a means of surfacing and leveraging diverse student ideas / identity to adapt instruction

2) Describe how grade-band performance expectations fit within the NYSSLS K-12 progression

3) Articulate the value of student experiences and ideas as powerful resources in explaining phenomena and solving complex science issues

4) Recognize CTS as a process and set of resources that can increase opportunities for all students to learn and do science

Middle School Year 2

Topic(s)

Designing Resilience

Description

In this course, participants will reflect on their teaching practice by exploring extreme weather and flooding in NYC, using models to engineer solutions. Working in a collaborative learning community, participants will develop strategies for eliciting students' ideas in their instruction and integrating models; deepening students' understanding of scientific concepts and their practical applications, while fostering student agency in support of divergent solutions.

Institution	NYSCI
Format	Async, In-Person

In-Person Dates	Times
Sunday, 11/9/25	10:00 AM - 3:30 PM
Sunday, 11/23/25	10:00 AM - 3:30 PM

Middle School Year 2

Topic(s)

Conserving Populations

Description

How can we strengthen students' connection to science content? By exploring strategies for eliciting student ideas, scaffolding and using models, participants will practice encouraging students to share their ideas and identify how their prior knowledge and experiences help strengthen their connection to scientific phenomena. Using zoo exhibits and resources, participants will explore issues related to species conservation and learn how modeling not only helps scientists communicate but also understand and solve real world issues.

Institution	BXZ
Format	In-Person

In-Person Dates	Times
Wednesday, 12/3/25	9:00 AM - 3:00 PM
Wednesday, 12/17/25	9:00 AM - 3:00 PM

Middle School Year 2

Topic(s)

River Ecology

Description

Participants will explore strategies for eliciting student science ideas and connections through several science practices, especially “developing and using models” to generate questions and explain phenomena, using a series of online resources developed by the Museum which include short documentary interviews with scientists from the Cary Institute of Ecosystem Studies, parallel readings and real data collected embedded in an online graphing tool for ease of use. The focus phenomenon is the arrival of the zebra mussel in the Hudson River and how it will affect various parts of the ecosystem.

Institution AMNH

Format In-Person

In-Person Dates	Times
Tuesday, 12/9/25	8:00 AM - 2:30 PM
Tuesday, 1/13/26	8:00 AM - 2:30 PM

Middle School Year 2

Topic(s)

March Mammal Madness

Description

Learn how to bring the madness of March Mammal Madness into your classroom! By madness, we mean exciting, educational, and structured animal madness. Each year, animals from around the globe go head-to-head in simulated battles to determine the ultimate champion. Inspired by the NCAA March Madness, MMM was created by Dr. Katie Hinde as a tournament-style game backed by actual science. Using storytelling (narrated by scientists from around the US) participants learn about “interspecies interactions, ecological context, how natural selection has shaped adaptations, and conservation management of endangered species.” Learn about this educational immersion into a virtual world of animal encounters, receive tips for facilitating student engagement, and incorporating MMM into your curriculum.

Institution SIZ

Format Sync

Sync Dates	Times
Sunday, 1/11/26	9:00 AM - 12:00 PM
Sunday, 1/18/26	9:00 AM - 11:30 AM
Sunday, 1/25/26	9:00 AM - 12:00 PM
Sunday, 2/1/26	9:00 AM - 11:30 AM

Middle School Year 2

Topic(s)

Conserving Populations

Description

How can we strengthen students' connection to science content? By exploring strategies for eliciting student ideas, scaffolding and using models, participants will practice encouraging students to share their ideas and identify how their prior knowledge and experiences help strengthen their connection to scientific phenomena. Using zoo exhibits and resources, participants will explore issues related to species conservation and learn how modeling not only helps scientists communicate but also understand and solve real world issues.

Institution	NYA
Format	 In-Person

In-Person Dates	Times
Monday, 2/2/26	9:00 AM - 3:00 PM
Monday, 2/9/26	9:00 AM - 3:00 PM

Middle School Year 2

Topic(s)

Ecosystem Dynamics

Description

Historically, New York forests relied on a diversely populated leaf litter layer that blanketed the forest floor, forming a balanced, interconnected ecosystem. However, this balance was disrupted when an unassuming wiggler was brought to our region by European settlers. What can we learn from the observable legacy of colonization and globalization and how they continue to impact forest ecosystems? Participants will track changes in thinking around forest floors by creating, sharing, and revising models. Through diverse discourse strategies, participants will question the language used to describe non-native/invasive species, animal adaptation and acclimations. Participants will engage in hands-on learning about local decomposers and how to make and maintain a classroom vermicompost bin.

Institution QBG

Format In-Person

In-Person Dates	Times
Saturday, 3/14/26	9:00 AM - 3:00 PM
Saturday, 3/28/26	9:00 AM - 3:00 PM

Middle School Year 2

Topic(s)

Plant Structures and Functions

Description

Participants will engage as science learners in creating and revising scientific models to make sense of a physiological plant process. Learners will work together to consider various explanations and make arguments as they gather new evidence through direct interactions with plants, water and other materials as well as information from readings, diagrams and instruction.

As teachers, participants will examine how the learning sequence was structured to support learners in activating and expressing prior understanding, guide learners in sense-making talk around new evidence, and scaffold efforts to integrate and articulate new understandings. Participants will be able to apply these structures and strategies to their own teaching in various content areas.

Institution NYBG

Format  In-Person

In-Person Dates	Times
Saturday, 4/25/26	9:00 AM - 3:30 PM
Saturday, 5/9/26	9:00 AM - 3:30 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS25 Biodiversity and Interdependency

Description

All life is rooted in interdependency. Life has evolved over millions of years by collaborating, not just competing, with other organisms. Throughout the Curriculum Topic Study (CTS) framework, we will unpack the content and skills needed for students to be successful in understanding Interdependency Among Organisms. Through an asset-based lens, we will identify and leverage our student's skills and content knowledge to make learning accessible and actionable for all students. We will explore the Garden to make observations of the interdependency of all life at the Garden from bugs to birds to us. We will also unpack standards and research to determine what students should know and how best to support all learners through accessible and engaging pedagogical practices.

Institution QBG

Format  In-Person

In-Person Dates	Times
Saturday, 10/25/25	9:00 AM - 3:00 PM
Saturday, 11/8/25	9:00 AM - 3:00 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS08 Evaluating Evidence

Description

How do we determine fact from frenzy? Making claims based on solid evidence and explanation enhances credibility. Sharks are fascinating to the public, yet media perception can cause mass misconceptions around these top ocean predators. The primary evidence being examined in this course will highlight the relationship between media coverage, shark incidents, and population changes. Shark perception will be explored in our Ocean Wonders: Sharks! exhibit. Based in the curriculum topic study (CTS) model, participants will use research findings on teaching and learning to reflect on the impact of evidence and explanations in arguments. Participants will also work towards developing effective teaching strategies for strengthening science literacy in these areas.

Institution NYA

Format  In-Person

In-Person Dates	Times
Wednesday, 11/12/25	9:00 AM - 3:00 PM
Wednesday, 11/19/25	9:00 AM - 3:00 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS02 Adaptation

Description

How can we tailor curriculum to meet student needs? Following the Curriculum Topic Study (CTS) format, we will investigate the research behind both how natural selection creates adaptation and what students and adults need to know about this topic. We will explore Bronx Zoo exhibits and activities and explore how these resources can leverage student experiences and ideas to help all students learn science together. Through deeper understanding of curriculum goals and common misconceptions, participants will reflect on how we can most effectively teach this topic.

Institution BXZ

Format  In-Person

In-Person Dates	Times
Friday, 12/5/25	9:00 AM - 3:00 PM
Friday, 12/12/25	9:00 AM - 3:00 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS18 Phases of the Moon

Description

How can we support students in constructing an understanding of moon phases, and how can we advance students' ability to engage in science learning by doing so? We will use the Curriculum Topic Study format to explore research into what middle school students are developmentally capable of understanding about this topic and commonly held misconceptions; examine the core science ideas,cross-cutting concepts and science practices that students can use to make sense of this phenomenon; and consider implications for teaching this topic. We will examine how this topic is typically handled in classrooms and in commercially designed curricula such as Amplify, and consider how best to make modifications.

Institution	NYBG
Format	Async In-Person

In-Person Dates	Times
Saturday, 1/24/26	10:00 AM - 3:00 PM
Saturday, 2/7/26	10:00 AM - 3:00 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS01 Plate Tectonics

Description

When tailoring curriculum to meet students' needs, how do you know what to modify and what is essential to keep in place? Leveraging the research behind how and what students need to know about plate tectonics, participants will experiment with tweaking lessons while maintaining the integrity of their curricula.

Institution	AMNH
Format	Async Sync

Sync Dates	Times
Sunday, 2/1/26	9:00 AM - 12:30 PM
Sunday, 2/8/26	9:00 AM - 12:30 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS23 Evolving Landscapes

Description

This course is a Curriculum Topic Study (CTS), which is structured differently than other courses in Urban Advantage. While there is authentic science learning, CTS work involves the systematic study of research and standards about science learning. The process provides resources that help improve classroom instruction, curriculum, and assessments. The topic for this course is Biodiversity and Human Impact. As we go through each session we will be unpacking misconceptions, diving into how students learn about this topic, and exploring how knowledge builds through grade levels. Join us in this course as we work to collectively develop a shared knowledge base that elevates teaching and deepens student understanding of the complex relationship between biodiversity and human activities.

Note: This course includes one in-person site visit to Fresh Kills Park, held during a morning session. We will meet at the park to explore biodiversity and human impact firsthand. More details will be provided in advance.

Institution SIZ

Format  In-Person

In-Person Dates	Times
Saturday, 3/14/26	8:30 AM - 2:30 PM
Saturday, 3/28/26	8:30 AM - 2:30 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS03 Defining & Delimiting an Engineering Problem

Description

How do we help students define meaningful, real-world problems and see themselves as problem solvers? In this Curriculum Topic Study, participants will explore what it means to define and delimit engineering problems in ways that support student voice, identity, and curiosity. Using research-based resources and experiences with NYSCI exhibits, teachers will consider how to make instruction more responsive while engaging students in solving relevant problems.

Institution NYSCI

Format Async In-Person

In-Person Dates	Times
Saturday, 4/25/26	10:00 AM - 3:30 PM
Sunday, 5/9/26	10:00 AM - 3:30 PM

Curriculum Topic Study (CTS)

Topic(s)

CTS24 Ecosystem Stability

Description

New York City is made up of numerous local wetland ecosystems. There have been disruptions to these throughout history, but many are undergoing restorations now to perform naturally under changing climate conditions. Participants will learn what makes plants in these ecosystems adapted to life on the water's edge and examine research on how to teach ecosystem stability, disruption, and change through a curriculum topic study.

Institution	BBG
Format	In-Person

In-Person Dates	Times
Sunday, 4/26/26	9:00 AM - 3:30 PM
Sunday, 5/17/26	9:00 AM - 3:30 PM

Middle School Year 3

Course Goals

Year 3 teachers are required to take one of each of the following courses.

Supporting Ongoing Changes in Thinking

1) Apply one or more strategies for encouraging all students to successfully talk about science ideas represented in their models / explanations

2) Apply one or more scaffolds to support learners with revising initial models / explanations as they are exposed to new sources of information

3) Articulate how the practice of individual and collective sense-making helps strengthen students' understanding relationships between ideas, representations or explanations

Reflective Practice (RP)

1) Increase teacher confidence with deprivatizing practice through community-building, and applying protocols or processes

2) Strengthen the application of a strategy learned in UA using peer feedback, research, or protocols and processes for reflecting on practice

Middle School Year 3

Topic(s)

Exhibit Design

Description

Participants will explore and practice skills pertaining to helping their students work collaboratively, engage in collective sense making and providing thoughtful feedback. A group project focused on designing a model blueprint for a zoo exhibit will help participants achieve these objectives as they work together to revise initial models. Through group discourse, background research, exhibit visits and more participants will learn about exhibit design practices as well as the biology of their exhibit animal to help them further refine their models. Teachers will reflect with one another on the pedagogical practices utilized in this course and end the program by developing a plan for how they will implement some of these strategies in their own practice.

Institution	BXZ
Format	 In-Person

In-Person Dates	Times
Sunday, 12/14/25	9:00 AM - 3:00 PM
Sunday, 12/21/25	9:00 AM - 3:00 PM

Middle School Year 3

Topic(s)

Avian Adaptations

Description

From mockingbirds to sparrows to starlings, to you and me, many call NYC home. How have organisms adapted to living here? Who has been welcomed and who has been excluded by rapid urbanization that has transformed sprawling forests and wetlands into the concrete jungle that we know today? Through observations, historical perspectives, and place-based learning, we'll track our changes in thinking by creating and revising models. We'll deepen our understanding of the nuanced interactions between ecosystems and animal adaptations. We will engage our prior knowledge to practice individual and collective sense making as we explore urbanization and the life that contests and shapes it. Finally, we will reimagine our communities to create a more welcoming, inclusive, and responsive space.

Institution QBG

Format In-Person

In-Person Dates	Times
Wednesday, 1/14/26	9:00 AM - 3:00 PM
Wednesday, 1/21/26	9:00 AM - 3:00 PM

Middle School Year 3

Topic(s)

Developing Models

Description

Participants will take a deep dive into the practice of Developing & Using Models by constructing and revising a model to explain local phenomena. We will consider the NYS Culturally Responsive-Sustaining Education Framework to incorporate cultural perspective on the types of models we develop and how students talk about the effects of ecosystem change on populations of organisms.

Institution BBG

Format  In-Person

In-Person Dates	Times
Wednesday, 2/25/26	9:00 AM - 3:00 PM
Wednesday, 3/4/26	9:00 AM - 3:30 PM

Middle School Year 3

Topic(s)

Pigeons

Description

Participants will explore how human impact contributed to the rise and fall of two species of "superdove" AKA the passenger and rock pigeons. Through an examination of each organisms unique behaviors and traits, and differences in human responses to each, we will consider how our attitudes and beliefs can drive our actions and impact ecosystems.

Institution AMNH

Format In-Person

In-Person Dates	Times
Sunday, 3/29/26	9:00 AM - 3:00 PM
Sunday, 4/19/26	9:00 AM - 3:00 PM

Middle School Year 3

Topic(s)

Making Thinking Visible

Description

This professional development focuses on broadening your definition of what student participation may look like. Sharing ideas, engaging in dialogue, and collaborating with peers are all fundamental components of how students construct and revise understanding in science. How can we support equity of voice and diverse ways of demonstrating understanding? Participants will identify teaching moves to support students in sharing their science thinking in a range of ways.

Institution NYSCI

Format  Async  In-Person

In-Person Dates	Times
Sunday, 4/19/26	10:00 AM - 3:30 PM
Sunday, 5/17/26	10:00 AM - 3:30 PM

Middle School Year 3

Topic(s)

Exhibit Design

Description

Participants will explore and practice skills pertaining to helping their students work collaboratively, engage in collective sense making and providing thoughtful feedback. A group project focused on designing a model blueprint for an aquarium exhibit will help participants achieve these objectives as they work together to revise initial models. Through group discourse, background research, exhibit visits and more participants will learn about exhibit design practices as well as the biology of their exhibit animal to help them further refine their models. Teachers will reflect with one another on the pedagogical practices utilized in this course and end the program by developing a plan for how they will implement some of these strategies in their own practice.

Institution NYA

Format  In-Person

In-Person Dates	Times
Saturday, 5/2/26	9:00 AM - 3:00 PM
Saturday, 5/23/26	9:00 AM - 3:00 PM

Reflective Practice (RP)

Topic(s)

RP53 Literacy Strategies

Description

This online course helps teachers reflect on and strengthen their use of literacy strategies in science instruction. Participants will review various strategies, select one to focus on, and plan how to integrate it into a lesson. With support from colleagues and UA partners, they will revise, teach, and reflect on the lesson by analyzing a student work sample. The course includes collaborative discussions, peer feedback, and opportunities to apply new strategies in practice. To earn credit, participants must complete required posts and attend all scheduled Zoom sessions. Active online participation is expected throughout the course.

Institution		BXZ
Format	 Async	 Sync
Sync Dates	**Times**	
Saturday, 10/25/25	9:00 AM - 11:00 AM	
Saturday, 11/8/25	9:00 AM - 11:00 AM	
Saturday, 11/15/25	9:00 AM - 11:00 AM	
Saturday, 12/13/25	9:00 AM - 11:00 AM	

Reflective Practice (RP)

Topic(s)

RP13 Place-based Science and EXPO

Description

This course empowers educators to design science experiences that connect students to their communities, fostering curiosity and self-motivated learning. Aligned with NGSS practices, participants will explore strategies for guiding students to obtain, evaluate, and communicate information through meaningful, real-world phenomena. Participants will explore strategies that aim to inspire self-directed exploration, with the goal of supporting students in bringing their Science Stories and Adventures to the UA EXPO at the end of the year.

Institution AMNH & NYSCI

Format Sync In-Person

Dates	Times	Format
Saturday, 11/8/25	10:00AM - 4:00 PM	In-Person
Wednesday, 1/7/26	4:00 PM - 6:00 PM	Sync
Wednesday, 2/25/26	4:00 PM - 6:00 PM	Sync
Wednesday, 4/29/26	4:00 PM - 6:00 PM	Sync

Reflective Practice (RP)

Topic(s)

RP05 Birds of a Feather

Description

For true growth to happen, you need to experience support, collaboration, positivity, and reflection. This course provides a space for personal and professional growth assisting participants in improving their practice. We'll work together to build trust and create a Critical Friends Group, which is a group of people who improve their practice through the use of NSRF protocols. Are you feeling stuck on a problem you are facing in your classroom? This course can help you transition from that "stuck" place as you experience opportunities to reflect with other teachers, share obstacles you're facing, and receive actionable feedback. The goal of creating a CFG within our UA community is to build a network of support that will continue through the remainder of the school year and beyond.

Institution SIZ

Format  In-Person

In-Person Dates	Times
Tuesday, 11/18/25	8:30 AM - 2:30 PM
Tuesday, 12/2/25	8:30 AM - 2:30 PM

Reflective Practice (RP)

Topic(s)

RP17 Collective Imaginations

Description

It's important to recognize that traditional classrooms have implicitly and explicitly excluded students from marginalized communities. To uproot this, we will collaboratively construct an inclusive learning environment where the content is representative of its members and responsive to their needs. How might we begin to cultivate community building and to create safe learning spaces in our classrooms? In this course, we will review a variety of resources to inform our classroom communities and practice a variety of discussion protocols to make learning interdependent and accessible. Pairing "ways of knowing with habits of being" serves as an important point of reflection for our personal and professional growth.

Institution QBG

Format  In-Person

In-Person Dates	Times
Monday, 12/1/25	9:00 AM - 3:00 PM
Monday, 12/8/25	9:00 AM - 3:00 PM

Reflective Practice (RP)

Topic(s)

RP70 Inter-Visitation (In-Person)

Description

Have you been looking for rich examples of what powerful three-dimensional science instruction can look like? In this course, participants will reflect on and grow their practice by visiting veteran UA teachers (the UA Fellows) who have successfully integrated the program's tools and resources, and cutting edge research on teaching and learning, into their practice. You will develop a repertoire of tools for observation and implementing inter-visitation in your schools. This course includes a one 5-hour day of professional learning and one 5-hour classroom visit day (includes travel time; date and location of your choosing; substitute reimbursement provided to your school).

Institution AMNH

Format In-Person

Dates	Times
Thursday, 12/11/25	9:00 AM - 2:30 PM

*Second date TBD

Reflective Practice (RP)

Topic(s)

RP70 Inter-Visitation (Online & In-Person)

Description

Have you been looking for rich examples of what powerful three-dimensional science instruction can look like? In this course, participants will reflect on and grow their practice by visiting veteran UA teachers (the UA Fellows) who have successfully integrated the program's tools and resources, and cutting edge research on teaching and learning, into their practice. You will develop a repertoire of tools for observation and implementing inter-visitation in your schools. This course includes a one 5-hour day of professional learning and one 5-hour classroom visit day (includes travel time; date and location of your choosing; substitute reimbursement provided to your school).

Institution	AMNH
Format	 Async  In-Person
Dates	Times
*Online date TBD *In-Person date TBD	9:00 AM - 2:30 PM

Reflective Practice (RP)

Topic(s)

RP71 Building Our Practice (In-Person)

Description

We'll be applying the approach and resources of the NSRF to develop a Critical Friends Group (CFG) that will support one another as science teaching professionals! Our work will begin with building community, becoming more familiar with what a CFG looks like in practice, and the importance of protocols. We will be taking a deeper dive into CFG work, including preparing for giving and receiving meaningful feedback, and participants presenting their own puzzles of practice to get feedback from their peers. Each participant will be meeting with their assigned Lead Teacher mentors to prepare for their own presentations.

Puzzles of practice may include:

-Dilemmas related to student learning
-Examining and learning from student work
-Looking at and reflecting upon teacher work

Institution

BBG

Format

In-Person

In-Person Dates	Times
Saturday, 1/10/26	9:00 AM - 3:00 PM
Saturday, 1/24/26	9:00 AM - 3:00 PM

Reflective Practice (RP)

Topic(s)

RP71 Building Our Practice (Online)

Description

In this online course, we'll be applying the approach and resources of the NSRF to develop a Critical Friends Group (CFG) that will support one another as science teaching professionals! Our work will begin with asynchronous work in Moodle dedicated to building community, becoming more familiar with what a CFG looks like in practice, and the importance of protocols. During synchronous Zoom meetings, we will be taking a deeper dive into CFG work, including preparing for giving and receiving meaningful feedback, and participants presenting their own puzzles of practice to get feedback from their peers. Each participant will be meeting with their assigned Lead Teacher mentors to prepare for their own presentations.

Institution	BBG
Format	Async / Sync

Sync Dates	Times
Sunday, 2/1/26	9:00 AM - 1:00 PM
Sunday, 3/1/26	9:00 AM - 1:00 PM
Sunday 3/8/26	9:00 AM - 1:00 PM

Reflective Practice (RP)

Topic(s)

RP12 Ambitious Science Teaching Study Group

Description

Participants will work together to discuss and make sense of the book, Ambitious Science Teaching by Mark Windschitl, and workshop its practices in their classrooms. This course will meet over Zoom and require asynchronous work to read chapters from Ambitious Science Teaching, share ideas using Perusall, and apply ideas to personal practice. Zoom sessions will focus on discussing the reading and reflecting on classroom practice.

*Teachers registered for this course must be available to login via Zoom for each of the date(s) listed. Please make your best effort to use a computer (not a phone or tablet) in a stationary, reasonably controlled location with stable wi-fi, no other obligations and minimal distractions. Teachers are also expected to actively participate in every aspect of the course (online activities, live discussions, breakout rooms, polls, discussion forums, quizzes, etc).

Institution	NYBG
Format	Async Sync

Sync Dates	Times
Thursday, 2/26/26	4:30 PM - 6:30 PM
Thursday, 3/12/26	4:30 PM - 6:30 PM
Thursday, 3/26/26	4:30 PM - 6:30 PM
Thursday 4/16/26	4:30 PM - 6:30 PM

Reflective Practice (RP)

Topic(s)

RP08 Coaching Strategies

Description

Teachers will engage in teacher-led coaching and questioning that will lead students to create rigorous and scientifically supported long-term investigations. This course emphasizes teacher collaboration and support from lead teachers in order to improve the implementation of science investigations in the classroom. Teachers will engage in collaborative, critical and supportive dialogue as they examine the strategies and artifacts they use to guide and support students in the design of their investigations.

Institution	NYA
Format	Async In-Person

In-Person Dates	Times
Friday, 2/27/26	9:00 AM - 2:00 PM
Friday, 3/13/26	9:00 AM - 2:00 PM

Reflective Practice (RP)

Topic(s)

RP55 Field Trips

Description

Transform your science teaching by tapping into the power of science-focused field trips and learning directly from your UA peers in action! In this reflective practice course, you will explore how cultural institutions' exhibits, collections, and digital resources boost students' curiosity, engagement, and achievement. You'll observe a UA Lead Teacher guiding an authentic, standards-aligned field trip, seeing firsthand how to structure impactful pre-, during-, and post-trip activities. Throughout the experience, you'll reflect on strategies for planning and implementing your own memorable excursions too! This course will consist of one 5-hour day of professional learning, one 3-hour field trip ride-along, and a 3-hour online debrief of the experience.

Institution AMNH

Format Sync In-Person

Dates	Times	Format
Sunday, 11/9/25	10:00 AM - 4:00 PM	In-Person
*Second date TBD		
Sunday, 3/15/26	10:00 AM - 1:00 PM	Sync

Parent Coordinator Workshops

Topic(s)

Why Cultural Institutions Matter for Students' Science Learning

Description

Science is all around us—in our communities, stories, and traditions. Museums and cultural places help bring science to life and connect it to students' everyday experiences. In this workshop, parent coordinators will use UA institutions as inspiration to help them focus on creating a sense of belonging at our institutions and building strong communities within their schools and with UA.

Format

 In-Person

Dates	Times	Institution
Friday, 11/14/25	9:00 AM - 2:30 PM	SIZ
Tuesday, 11/18/25	9:00 AM - 3:00 PM	AMNH
Wednesday, 12/3/25	9:00 AM - 2:30 PM	BBG
Thursday, 1/29/26	9:00 AM - 2:30 PM	BXZ
Thursday, 12/12/26	10:00 AM - 3:30 PM	NYSCI
Tuesday, 3/10/26	9:00 AM - 2:30 PM	NYA
Tuesday, 4/21/26	9:00 AM - 3:00 PM	QBG
Wednesday, 5/6/26	9:00 AM - 3:00 PM	NYBG

Administrator Breakfasts

Topic

Belonging in Museums and Science - Engaging Your Families Through Cultural Experiences

Format  Sync

Date	Time
Wednesday, 10/8/25	9:00 AM - 11:00 AM

Topic

Deepening Partnerships to See Students' Local Investigations Thrive

Institution AMNH

Format  In-Person

Date	Time
Wednesday, 12/10/25	9:00 AM - 12:00 PM

Administrator Breakfasts

Topic

Supporting UA Teacher Leadership Advances School Goals

Institution AMNH

Format  In-Person

Date	Time
Wednesday, 12/10/25	9:00 AM - 12:00 PM

Topic

Using Class Trips to Reap the Rich Benefits of a Localized Curriculum

Format  Sync

Date	Time
Wednesday, 10/8/25	9:00 AM - 11:00 AM