

## Overview for Science Program

*Our science program nurtures the habits found in the minds of scientists: curiosity, questioning, close observation, appreciation of the natural world. This enables us to build the knowledge base and skill set needed for scientific literacy.*

At 276, we know instruction that is characterized by academic rigor prepares students for participation in 21<sup>st</sup> century society. Our science program emphasizes critical thinking and logical reasoning that arises from investigations, observations, data analysis, and rational explanations of natural events. We expect students to apply these skills to address real life problems, to make informed decisions and to become scientifically literate citizens.

Our science curriculum is grounded in the *Next Generation Science Standards* and is based on the scope and sequence produced by NYCDOE. The *Next Generation Science Standards* identify science content and practices along with engineering practices that all students should learn from kindergarten through high school graduation.

Students learn science concepts and content in elementary classrooms as well as in the science classroom. In each grade we celebrate student scientific learning with a STEAM fair at the end of the year.

In grades K-5 these projects are a result of classroom studies.

In grades 6<sup>th</sup> and 7<sup>th</sup>, students share their scientific research.

8<sup>th</sup> graders are preparing for and focused on preparing for the Regents exam.

Many of the units that students study in science are designed to be integrated with other disciplines. We are able to create authentic links between science and social studies as we do in second grade when students learn about NYC as they study the design of bridges. Other times we

create links with art, as in fifth grade when students learn about nutrition and they design packaging for healthy food. Often, we link science with literacy and math practices; students

Our school building was one of the first schools in NYC to meet environmentally sustainable guidelines. Special design features include significant passive solar features including extensive natural lighting throughout the building. Our building also includes one of the city's largest photovoltaic panel arrays, an extensive energy and weather monitoring system, educational panels about environmental issues located throughout the building, and a roof terrace garden. Students enjoy learning about plants and nutrition through their gardening work on the terrace and at the Urban Farm in Battery Park.



are required to read non-fiction texts, write lab reports or informational texts and collect, analyze and organize data on tables and graphs.

Students receive formal instruction in using the scientific method which begins in 5<sup>th</sup> grade. In middle school, students are expected to identify a scientific question and design and carry out a controlled experiment with increasing independence. Formal lab reports are an important part in these investigations.

This work prepares our students for the required labs and rigorous disciplinary learning that is part of our 8th grade Living Environment Regents course.

### Key goals:

- Nurture curiosity about the world.
- Build a strong foundation of scientific knowledge that students can use to understand the world and critically analyze scientific claims.
- Understand how the scientific process is used to establish accepted theories in science.
- Reason logically about evidence and how it is used in a scientific argument.

### FAQs

#### *Is there a textbook?*

We opt to use carefully curated sets of resources and experiences that provide all children access to ideas that challenge their growing intellect and provide the opportunity to learn how to have conversations across texts. These sets of resources include hands on investigations, video, images, text books, and field trips that allow our students to construct conceptually rich understandings of science content and build the critical thinking skills necessary for scientific thinking dispositions.

#### *I hear a lot about STEM and STEAM programs. What are these? Does my child learn these skills?*

There is a lot of buzz in the media about STEM and STEAM programs. These are interdisciplinary focus on Science, Technology, Engineering, and Math. The “A” in STEAM adds in Art. At 276, we have been building in STEM units from our earliest days. We continue to strive to enhance these skills by building a robotics program and creating a Maker Space.

#### *When does my child learn to design experiments?*

In fifth grade, students learn about the scientific method in whole class lessons. In middle school, students are expected to identify a scientific question and design and carry out a controlled experiment with increasing independence. Formal lab reports are an important part in these investigations. This work prepares our students for the required labs and rigorous

disciplinary learning that is part of the Living Environment Regents course that our 8th graders take.

*What is on the fourth grade science test? How is my child prepared?*

The 4<sup>th</sup> grade science test has two parts. The first is an hands on lab experience that assesses student skills in measurement and using scientific tools. It also requires students to complete several scientific tasks and explain how they make sense of the content and concepts embedded in these tasks. There is also a content test that has multiple choice questions and constructed responses. Because of the strength of our science program, our students are poised to be successful.

*Do you offer a Regents Science class?*

Yes. Our 8<sup>th</sup> graders take Living Environment as their science course and sit for the Living Environment Regents test at the end of 8th grade.

*My child is very interested in science. What special programs do you have to nurture this interest?*

We are very proud of our science program and are confident that it nurtures student interest in science. In addition to the program highlights listed below, we also have gardening on our 8<sup>th</sup> floor garden terrace, Maker Space lunch clubs, Robotics program in our upper grades, and a strong, formal relationship with Urban Advantage, a consortium of science institutions in the city that provide science support and classroom resources to schools.

*How can I support my child in learning science at home?*

We are lucky to live in NYC with such amazing scientific resources in our backyard. Family visits to science museums, the [Botanic Gardens](#), the [Wildlife Conservation Society](#), opportunity to learn with the [National Park Service](#). Many of these organizations offer summer and holiday camps for children and teens. Science magazines such as [Ranger Rick](#), [National Geographic](#), the [Cricket magazines](#) (Muse, Dig, etc) make getting snail mail a treat. Cook with your children. Try new recipes. Research together the chemistry that makes cooking work.