

Science

As children explore the world around them, they gain a deeper understanding and appreciation for the interconnections in nature and science. They begin to learn about conservation and activism. Our seventy-seven acres of meadows, woodlands, wetlands, and creeks are a natural workshop for science observation and discovery. Science studies are supported with field trips to museums and local nature sites, including an annual trip to Camp Chingachgook on Lake George. Cornell Cooperative Extension's Demonstration Gardens on our property provide an accessible resource. Students practice conservation through a recycling program coordinated by middle school students, and by collecting data from our solar panels. Currently, students and teachers are planning together to start growing vegetables in our student-built greenhouse for a local food pantry.

Pre K 3's and 4's

In Pre K, scientific inquiry is introduced across all disciplines.

- Building Blocks: ramps, bridges, roads, structures, sink and float
- Nature Observation: walks, "I saw" journals, change of season, collections
- Astronomy: sun, moon, stars, planets, day vs. night sky
- Health and Nutrition: skeletal system, organs, personal growth, and foods
- Chemical Changes: cooking, experimentation with materials
- Life Sciences: seed to plant, animal families, human body, birds, five senses, weather
- Energy: magnets, wind power
- Tools: measuring tapes, stethoscopes, binoculars, scales, keyboard, cash register

K-5

In grades K – 5, students' scientific inquiry is closely connected with social studies essential questions and is integrated with language arts, math, art, and health. Students explore observable science through hands-on activities and move towards more abstract concepts as they mature. Use of scientific tools, development of skills, and experiences with research are built into the science program.

Kindergarten and First Grade

Year 1

Social Studies: Homes and Habitats
A Spanish Speaking Country

Science Explorations:

Observation of garden, forest, stream; Animal Life Cycle; Animal habitats, homes, and adaptations; Principles of life (what life needs); Plant life cycle; Water cycle – transpiration; Atoms – phase change; Seasons; Weather

Year 2

Social studies: Ourselves, Our Families and Our Community
An African Country and Its Culture

Science Explorations:

The five senses; Animal life cycle; Cooking; Buoyancy; Sound (drums); Light energy – Color prisms; Chemiluminescence; Foods (Seed to table); Weather/Seasons

Science in Health Class: Body Systems: Circulation, Skeletal, and Muscular

Second and Third Grade**Year 1**

Social Studies: The Hudson River
An Asian Country and its Culture

Science Explorations:

Hudson River; Atoms; Sedimentary and igneous rocks; Erosion; Water cycle; Riverscapes; Tides; Estuary; Predator/Prey; Detritus ; Ganges River: geography, environment, creatures

Year 2

Social Studies: Local Native Americans and Dutch Settlement
Modern Albany or Troy

Science Explorations:

Biota changing over time; Fossils; Extinct creatures; Native/Non-native species; Tulip project; Wolves; Wind power; Water navigation; Sink/float; Boats

Science in Health class:

Anatomy/ Physiology; Body systems; Human life cycle; Body comparisons; Exercise science; Energy systems: Aerobic/Anaerobic

Fourth and Fifth Grade**Year 1**

Social Studies: New York State – Geography and Native American Tribes
The Americas: Maya, Inca, and Aztec

Science Explorations:

NY State forest and wetland; Environment and animals; Tree identification; Food webs; South and Central American bio-regions; Astronomy

Year 2

Social Studies: United States – Geography and Immigration
Westward Movement in America

Science Explorations:

Movement of the earth – seasons; Energy: Chemical, electromagnetic, heat, light; Animal/Plant migration; Energy: Mechanical - force and motion, simple machines; Invent a Vehicle

Science in Health class:

Anatomy/ Physiology; Body systems; Human life cycle; Body comparisons; Exercise science; Energy systems: Aerobic/Anaerobic

Sixth and Seventh Grade**Year 1: Biology/Ecology**

Bacteria; Wetland microbiology; Forest ecology; Fungi; Protists (phytoplankton, algae, protozoa, etc.) and animals (mollusks, echinoderms, cnidarians, crustaceans, etc.) and their importance in marine and freshwater food webs. Investigation of cells. DNA replication and genetics. Plants and their connections to other organisms. Greenhouse projects.

Year 2: Physics/Chemistry

Energy; The earth's movement around the sun; Differential light and heat. Scientists from Aristarchus through Einstein who have changed our understanding of our place in the universe. Investigation of light, sound, chemical, electromagnetic, thermal, and mechanical energy. Solar powered vehicles.

Eighth Grade: Earth Science

Mapping; Evolution through geologic time; Water quality; Energy. Timeline of key scientists who have changed our understanding of the Earth's place in the solar system. Deforestation; global warming. The solar system: Scale; Perihelion and aphelion for each planet; Nebulae and beyond. Plate tectonics, volcanoes, earthquakes, and mountain building. Water: Groundwater and pollution, watersheds, wetlands, and erosion. Water quality testing of our local stream. Investigation of energy. Hands-on labs are conducted throughout the year, allowing for greater understanding.