Knowing that hands-on instruction is an educational tool that leads to student success, educators across the District strive to provide authentic learning opportunities in everyday lessons.

On any given day, teachers connect abstract concepts to the real world through lessons where students put their pens and papers down to test scientific theories, measure, build and create.

“Hands-on instruction is a fundamental learning tool that not only reinforces curricula, but also fosters a love of learning,” said Superintendent of Schools Dr. Steven R. Cohen.

Within the District, authentic learning starts in kindergarten, where hands-on instruction helps students grasp a variety of concepts, from letter recognition and basic math to socialization through play centers.

As students move up to first and second grade, interactive learning continues as teachers reinforce math, science, ELA and social studies curricula by providing instruction that requires students to employ all of their senses.

“Most students learn in a variety of ways, and hands-on instruction allows teachers to reach all students, especially at the elementary level where they are just learning to read and write,” said Miller Avenue School Principal Christine Carlson.

The same is true at Wading River School, where third-, fourth- and fifth-graders are provided with engaging learning experiences that will last a lifetime. One way this impact is made is by teaching students concepts in the classroom and having them apply those ideas during field trips.

“They are receiving instruction that they can use in the real world and will remember,” said Wading River Principal Louis Parrinello.

At the Middle School, teachers encourage students to use critical thinking skills, work collaboratively and find innovative ways to delve deeply into concepts in every class. For example, students are taught about American history through a mock simulation of the Second Continental Congress.

“Authentic learning is highly engaging,” noted Middle School Principal Dr. Linda Anthony. “It gives students the opportunity to actively construct their learning through discovery.”

Authentic learning is being taken to new heights at the High School as well, where students have the opportunity to demonstrate their individual strengths in a variety of ways, such as in a new flipped classroom pilot program (learn more about this initiative on page 4).

“There is a true opportunity for students to learn from each other, collaborate and engage in that regard,” said High School Principal Dan Holtzman.

More information about the hands-on experiences in which students across the District are participating can be found inside this newsletter.

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Superintendent of Schools Dr. Steven R. Cohen
Students Excel Through Hands-on Learning

Grade: 2  
Lesson: The Scientific Method  
Hands-on Learning Component: In learning the basics of the scientific method, second-graders experimented with apples. In class, the students used their senses and observation techniques to compare fresh apples to dry apples and store-bought apple juice to homemade apple juice. Students also tested theories about what would happen to apples if placed in different liquids. The lesson culminated with the second-graders making applesauce to learn about how apples can change over time.

Grade: 2  
Lesson: Ecosystems  
Hands-on Learning Component: To learn about the various types of ecosystems and indigenous animals, students visited the Wading River Pond, where they explored the pond and its surroundings using the scientific method. Students made general observations, tested the water for oxygen and bacteria levels, and took the temperature of the water to determine whether the pond is a healthy ecosystem.

Grade: 3  
Lesson: Motion  
Hands-on Learning Component: In exploring the concept of motion, students tested various objects, recording their findings and hypotheses. They tossed beanbags, rolled cars and fanned each other with paper. The lesson was a prelude to the third-graders’ unit on light and sound.
**Grade: 4**
Lesson: Long Island Ecosystems
**Hands-on Learning Component:** As part of a lesson on Long Island’s diverse ecosystems, students learned to use a variety of scientific instruments during a field trip to Fire Island. They used the instruments to test soil, air and water temperatures, as well as wind speeds on the barrier beach. They recorded their findings and compared them to hypotheses they had made prior to the trip.

**Grade: 5**
Lesson: Atoms
**Hands-on Learning Component:** To garner an understanding of how small atoms are, students were taught to use microscopes to view things not seen by the naked eye. They were encouraged to explore the parts of a microscope and even create names for the different parts. The lesson concluded with the fifth-graders viewing a variety of slides containing microscopic items.

**Grade: Middle School**
Lesson: The Earth’s Circumference
**Hands-on Learning Component:** To understand how early scientists calculated the earth’s measurements, students used globes, protractors and rulers to measure the earth’s circumference through shadow angles from two different locations. The lesson, which crossed the disciplines of math, science and technology, challenged students to think critically and test theories.

**Grade: Middle School**
Lesson: American History
**Hands-on Learning Component:** In delving into American history, students learned about the Second Continental Congress and then took part in a 40-year school tradition by simulating the historical event. Dressed in Colonial garb, they presented arguments and speeches from both the Radicals’ and Tories’ sides. The middle schoolers concluded their performance by asking their peers to cast a vote for independence of loyalty.
Beginning in the fall of 2016, Shoreham-Wading River High School students will have the opportunity to take on in-depth research, collaboration and high-level thinking courses that build college and career skills through the new AP Capstone Program.

“This is a tremendous opportunity for our District,” said High School Principal Dan Holtzman. “The level of coursework in the program will challenge our students.”

To earn an AP Capstone diploma, students must start interdisciplinary coursework as a High School junior and complete and publish a major research paper with the assistance of a mentor by their senior year. Through this coursework, they will cultivate the skills needed to conduct independent research and produce an academic thesis. Additionally, AP Capstone students are required to earn a score of 3 or higher on their AP exams in order to receive the AP Capstone diploma.

To provide students with an authentic learning experience, the High School has launched a program that puts learning directly into their hands.

Piloting the program are science teachers Lauren Ocker and Alan Gandt, who recently completed professional development courses on the flipped classroom model. In their classes, students are not only delving more deeply into context, but are also receiving a more individualized education.

The flipped classroom reverses the traditional lecture and homework components of a course. Instead of students sitting for a lecture in class, their teacher, using Google products, provides them with short, interactive video lectures to review at home. Students watch the video and answer questions during each segment of the lecture. With the lecture portion of a lesson completed, class time can then be used for inquiry-based work. Students are instructed to discuss the lecture at hand, work on related projects or perform hands-on experiments.

Teachers are also freed up to meet with students individually or in groups to discuss the content.

“The flipped classroom model provides much more flexibility for learning and for the teachers in terms of engagement,” said Director of STEM Dr. Amy Meyer. “There are many benefits to it, and it can apply to all disciplines.”

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