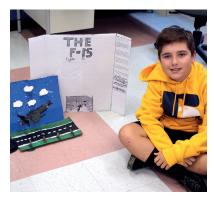


OUR REVOLUTIONARY CAPSTONE PROJECT PROGRAM



A unique program that challenges students to complete regular research projects throughout their years in the District, the Capstone Project Program in the Middle Country School District empowers students to become independent critical thinkers and versatile, multiskilled students. The program began with the 2014-2015 school year when we revamped our STEM education and inquiry learning initiatives. This led to the creation of committees to examine and rewrite curriculum bringing a new focus to creative problem-solving, real-world connections to science and mathematics lessons, and the nurturing of research skills across all curriculum areas. The result was the Middle Country School District Capstone Project. As of 2024, we will be the only district island-wide that requires completion of a Capstone Project for graduation. In this newsletter, you'll see some of the amazing Capstone work completed or underway in the Middle Country School District.



OVERVIEW OF THE PROGRAM

ELEMENTARY LEVEL

Students are introduced to research skills adapted from the Big6 Research Model (www.thebig6.org), a process leading students through six distinct steps to answer information-based questions. Through a series of structured activities and lessons, students learn to explore their own interests to select an information problem, seek out and access reliable resources, create a final project, and then reflect upon this process.

MIDDLE SCHOOL LEVEL

Enhanced skills are put to the test in grade 8 when students complete two Capstone experiences: one, a science research experience in connection with their living environment lab, and a humanities research experience adapted from the National History Day model.

HIGH SCHOOL LEVEL

Students are given latitude to determine their own culminating Capstone experience. Students have the option to demonstrate their mastery of research skills by

- Enrolling in a course with embedded research skills and tasks
- Developing a research project in conjunction with an extracurricular activity
- Selecting a completely independent topic to research under the guidance of a Capstone adviser or librarian
- Engaging in a project outside of school where research skills are exercised under the supervision of a community-based mentor

I was excited to learn that the Middle Country School District is pioneering a Senior Capstone Research Project. I cannot wait to see the innovative research the Middle Country students will discover!

~ Roger Tilles, NY State Regent

The Capstone Project is a unique opportunity for each student in our District to explore, examine, and research a topic that they are passionate about. The skills acquired throughout this process will strengthen their success in all their classes and may even set the course of their future career path.

~ Robert Feeney, Middle Country School District Board of Education Vice President

Middle Country Capstone Projects have a powerful impact, as students that complete environmental research can immediately improve our community and world. ~ Steve Englebright, NY State Assemblyman

Assemblyman Englebright was an early advocate of The Capstone Initiative in Middle Country, providing both inspiration and funding for student projects.

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CAPSTONE PROJECT: ELEMENTARY LEVEL

"Our elementary students enjoy their first taste of a formalized research process while exploring a self-selected topic of interest. Skills gained provide a foundation for students' secondary Capstone experiences." - John DeBenedetto, Middle Country School District Board of Education Trustee

THE VALUE OF CODING IN PRE-K AND KINDERGARTEN



Today, the importance of learning coding is paramount. That is why—even though we recognize and value the time children spend in play—we stress the values and fundamentals of coding at an early level. Coding is one of the best methods of teaching problem solving, computational skills, communication, algorithms, creativity, math, writing, teamwork, persistence, and confidence, which are lifelong foundational skills. Coding is basic literacy in the digital age, and children need to understand and work with the technology that surrounds them. The Capstone Project Program has helped foster this learning.

From a developmental perspective, the type of thinking that goes into learning to code is very sophisticated, complex, and requires children to think and not just recite rote information. It is the type of thinking in which we want our students to engage. Allowing children to explore the concepts behind programming languages early in life sets the stage for success in learning to navigate the world as well as to code in later years. Additionally, as our students advance in grade, they will begin to design and develop Capstone Projects. Capstone Projects require students to think critically, solve challenging problems, plan, work in teams, set goals, and present their research.

WHAT DO ELEMENTARY STUDENTS THINK ABOUT CAPSTONE PROJECTS?

"Before the Capstone Project, I didn't even know what a bibliography was, but now I know how to write one for both a website and a book. In the end, I was able to write a 13-page report and create a presentation on a trifold board." Katelyn Treharne, Student, Holbrook Road Elementary School

"My Capstone Project was based off of a topic that I like and is near and dear to my heart: the beautiful continent of Africa! My research allowed me an opportunity to learn more about some features of the continent that I was not aware of." Enoch Kodua, Student, New Lane Elementary School

"The positive thing about Capstone is you learn new things. I didn't know that unstable atoms were a real thing. Research can make people think even more about the topic, which could lead to even more information and learning." **Ryan Tankiewicz, Student, Oxhead Road Elementary School**

"The Capstone Project turns students into researchers. I expanded my interests and knowledge based on the research I did on my topic. People learned facts from my project when I presented it to my class." Jayden Garelli, Student, Stagecoach Elementary School



CAPSTONE PROJECT: MIDDLE SCHOOL LEVEL

"Building upon skills learned through elementary and middle school, 8th grade students complete both a Science and Humanities Capstone Project, giving students the foundation needed to explore personalized research pathways in high school."

- Arlene Barresi, Middle Country School District Board of Education Trustee

SELDEN MIDDLE SCHOOL RESEARCH CLUB: A DAY IN THE LIFE OF A RIVER

Capstone Projects allow students to become immersed in an area that truly interests them while helping facilitate deeper, thought-provoking questions and solve problems locally. This year, Research Club members at Selden Middle School took part in two exciting hands-on, research-based Capstone learning opportunities, one of which was called *A Day in the Life of a River*.

An exciting STEM-oriented outdoor project, *A Day in the Life of a River* was designed to celebrate the river and estuary ecosystems unique to Long Island. Environmental education partners and students from school districts all over Long Island work alongside environmental scientists/professionals to collect scientific information and analyze samples to capture a snapshot of the environmental health of these ecosystems. Students



use hands-on field techniques to describe their sites, catch fish in nets, collect water and invertebrate samples, and analyze water chemistry. They examined the physical and chemical aspects of the Connetquot River, such as where freshwater and salty seawater meet, the number of sediments in the water, and turbidity/oxygen levels, as well as conducted biodiversity inventories of the flora and fauna. Additionally, students researched the effects of climate change here on our island.

NATIONAL HISTORY DAY: DEBATE AND DIPLOMACY IN HISTORY

All eighth-grade students in Middle Country complete a research project through ELA and social studies using the theme Debate and Diplomacy in History and the research model from National History Day. Two Middle Country students, Umber Sharma from Selden Middle School and Ava Matlock from Dawnwood Middle School, continued their research and entered their projects into the Long Island History Day competition.

"I wanted to understand how modern American diplomacy was formed. Has our country led the world out of any crisis, and could it do it again now? This is an interesting topic because there are extremely important lessons to learn from doing research on it. I learned to talk to experts, make videos, find and use primary sources, and much more. Our



school librarian, Ms. Battrick, helped me a lot. She helped me to understand the contest, provided instructions, found resources, listened to my ideas and gave feedback."

Umber Sharma, Selden Middle School

"My project is a documentary [on Brown v. Board of Education (1954)]. This topic is interesting because of all the effort that went into this case. Many cases challenging school boards occurred before Brown. However, none of them had as much media attention. There are so many people activists, students, and members of the NAACP—involved in getting the cases to the Supreme Court and getting the "separate but equal" doctrine



overturned. Ms. Strong (Capstone advisor) helped me throughout the process of my documentary by helping me get a strong thesis statement and find a unique point of view for my project."

Ava Matlock, Dawnwood Middle School

CAPSTONE PROJECT: HIGH SCHOOL LEVEL

"At the high school level, students truly have full autonomy over their Capstone Projects, and – like true researchers – can follow their projects wherever they lead."

- Dawn Sharrock, Middle Country School District Board of Education President

CENTEREACH FLUTIST EMBRACES CAPSTONE PROJECT, PERFORMS AT STATEWIDE FESTIVAL

Centereach High School student Kassandra Jurlando, pictured here with Regent Roger Tilles, credits Middle Country's unique Capstone Project Program with inspiring her to focus on the flute for her research. Kassie completed her Capstone Project in music last year by researching, learning, performing and reflecting on her flute-based NYSSMA All-State Solo.





THE EFFECTS OF ENVIRONMENTAL FACTORS ON FARM ANIMALS

An interest in PETA (People for the Ethical Treatment of Animals) and an article about the space requirements for goats led Newfield High School student Dylan DiScioscia to undertake a Capstone Project that investigated how environmental factors impact farm animals. Dylan said, "Librarian Ms. Cook has helped me to develop and form my research question and make it more relevant and interesting. She walked me through the research process and the steps to complete the project. She showed me where to locate articles and come up with interview questions based on my interest and research."

SCIENCE RESEARCH CLASS INVESTIGATES MICROPLASTICS

Students from Newfield's and Centereach's Science Research classes went to West Meadow Beach to collect sediment samples that will be used for a microplastics project. Students collected samples by the sound and bay side of the beach, and even saw an unexpected deer while collecting. Sediments will be screened for plastics and then analyzed at Brookhaven National Lab.



ADVANCED PLACEMENT SEMINAR AND RESEARCH

Last year, Middle Country began its roll-out of the College Board's AP Capstone Diploma Program with the addition of the AP Seminar course. The students who participated in AP Seminar learned a great deal: how to effectively analyze and evaluate information, conduct extensive research, develop well-written research papers using multiple sources, present their findings in front of an audience and more. Students enroll in AP Research after completing AP Seminar as part of the AP Capstone Diploma Program. CHS student Angelina Corriera said, "I learned that I am capable of writing a high-level paper that can be situated in a scholarly discussion." Angelina attributed the independent nature of this class for her growing sense of confidence as a researcher.

"Having gone through Middle Country schools myself, I'm envious I missed the Capstone experience, but am thrilled that my own children, as well as all students in the District, will have this opportunity. As a Research Administrator for the College of Engineering and Applied Sciences at Stony Brook University, I have knowledge of multiple scholarships and grant opportunities that are available to high school students. Middle Country's Capstone Diploma Program will prepare our children by providing a head start in research methodology and scientific exploration."

- Deborah Mann-Rodriguez, Middle Country School District Board of Education Trustee