

Classroom Newsletter

CAREN & STEVE & JACK

Adolescent Program | 2016-17



The MDC Water Treatment Facility - Waveris Thomas

This year as a part of our water occupation class, we visited the Metropolitan District Commission water treatment plant to grasp a better understanding of how our water is filtered, treated, and distributed. During our visit we learned about the entire process from start to finish, and how and why certain quality enhancing chemicals are put into the water. Upon arrival, two staff members greeted us at the door. They introduced themselves and gave us a brief history of the area and how long the MDC has been treating water.

The water treatment plant is built off Reservoir #6 in West Hartford, Connecticut and processes water, which is distributed, to the citizens of Hartford and West Hartford. The entire process starts with raw water that flows in from the Barkhamsted and Nepaug rivers. This water flows through a tunnel, which goes through Talcott Mountain and into Reservoir #6. The water then enters the plant's intake house where it will flow down large concrete pipes via gravity into the aerator. The aerator has a very turbulent action that releases concentrated gasses within the water, ultimately improving taste. Water from the aerator then travels to the flash mixing tank, where aluminum sulfate is added to the water. Powdered activated carbon is added seasonally here as well, to reduce seasonal taste and odor. After moving through the flash mixing tank, the water then goes to the flocculation tank where heavy mixing is continued. Here, the aluminum sulfate, which was previously added to the water, causes particles within the water known as floc to bundle together and sink to the bottom of the tank. The water then makes it way to a nearby sedimentation basin where the floc and powdered activated carbon settles out. The carbon and floc move to another part of the plant for disposal while the water continues onward to the sand filters.

There are six 1,260 square foot filter beds at the Reservoir #6 facility, each with a capacity of 60,000 gallons of water. In these beds, water passes through thirty inches of sand and a further twelve inches of gravel to remove any other impurities. The filtered water is then sent to storage, but on its way four key chemicals are added to the water: Fluoride (F), Sodium Hydroxide (NaOH), Orthophosphate (PO_4), and Chlorine (Cl_2).

Fluoride helps prevent tooth decay, Sodium Hydroxide helps reduce the natural acidity of water, which prevents corrosion in distribution piping systems, Orthophosphate is added to reduce corrosion, and Chlorine in the form of liquid Sodium Hypochlorite is added to kill any remaining bacteria. After the addition of the vital chemicals the water can continue its journey to the storage basin. Ten million gallons of water can then be stored in the two concrete storage basins located underground. Using gravity, water then flows into distribution pipes, which lead to the faucets of the homes and businesses of Hartford and West Hartford.

While we were inside of the facility, we got to stop by the quality checking room. There, we were able to taste the water and see how workers test for all different kinds of qualities. Afterwards, we were able to go on an amazing hike to the Heublein Tower where we could look over the entire Farmington River Watershed, and see where the drinking water for all of Hartford and West Hartford comes from. The workings of the Reservoir #6 water treatment plant built in the late 1930's are mind blowing, and seeing the entire process was definitely a great experience.



Fall On the Farm - Maya Oberstein

The air is getting colder, and most people are heading inside and turning on the heat, but not students on the farm. We are finishing up many projects, both in micro-economy and with our animals. Many of us are running tests on the nutritional value of our hay, as well as the bacterial content of things around the farm. Overall, the next few weeks around here are going to be very crazy and we have a lot to do to prepare for the winter bearing down on us.

There is a lot going on in the barn. On December 7th our goats, Luna and Daisy, received ultrasounds to determine if they are pregnant. Daisy is pregnant, but sadly, Luna is not. Currently, we are considering re-breeding Luna. In addition, a few of us have put in the goat wood beds, which will prevent them from being cold at night. The horses are wearing their winter shoes and horse blankets. Our chicks are now two months old and all of their feathers have finally grown in just in time for the winter ahead. All of the animals have received their heated water buckets and the chickens have new heater plates under their water. Lastly, a few of us have collected four different hay samples, which we will test for nutritional values. Based on the results, we will decide which hay we are going use moving forward.

Outside, we have finished building our new garden beds and placing them in the garden. Currently, we are spreading some wood chips and mulch. Some of us are working on fixing some of the fences so our baby goats will not be able to squeeze through the fence and the sharp wire ends will poke none of the animals.

The micro economy is in full production. The sauerkraut was unearthed and canned before the ground froze. Wax is being melted for lip balm and candles. Many students are felting wool from our own sheep, while others are creating soapstone carving. Enjoy the winter season!



A Study of Western Civilization - Emma Stremper

For our second humanities project this year, we studied the broad topic of *Western Civilization*. So broad, as you might imagine, that we will be studying it in two units, one in the fall and one in the spring. There is a lot of history to cover! We can only touch on the impact that each civilization has had on the modern world. The class started off with a compare and contrast analysis of Pericles' Funeral Oration and The Gettysburg Address. One of the ongoing ventures in the class was committing the Gettysburg Address to memory. It was a challenge, but in the end I was able to recite almost all of Lincoln's famous speech. Marching out of the classroom with us all reciting it at the top of our lungs was an exhilarating experience.

As the study progressed, we touched on the mammoth pyramids of Ancient Egypt, the troubled journey of Ancient Israel, the enlightened Athenians and the belligerent Spartans. On the last day, we split into two groups for a debate. Who was superior, Athens or Sparta? Tensions were high and the arguments were well-crafted. There was no clear victor. The Athenian team impressed upon the audience their intellect and love of the arts, while the Spartan team boasted of their great army and honor. To finish the session, and to arouse our interest for more, we took a glimpse into the politics of the Roman Empire. We look forward to another unit of study on *Western Civilization* in the spring.



Gym - Emilio Chan

Every week on Wednesdays as part of our curriculum, we have gym with Ms. Debbie. We usually start out with fitness exercises and then move on to fun games. For example, we have been focusing on flag football, and the essentials of the game, including the positions and the calls. Earlier this year, we had an emphasis on volleyball, but we played with a smaller net and a beach ball. We also briefly played kickball and basketball. We continued to develop our skills with volleyball at recess earlier this year. We often incorporate card games into our exercise.

Most activities are done either in pairs, or in groups. Very popular is a game called “scatterball” in which two people with balls attempt to hit everyone else with balls. If someone gets hit with a ball, they are out. However, if someone catches the ball that is thrown at them, the thrower is out and the person who caught the ball is then it. Everyone is very competitive and everyone wants to win. However, that doesn’t detract from the fun of the game. Perhaps you’re wondering what’s next? Well, if the weather cooperates we’ll be ice-skating soon!

Literature, *Animal Farm* - Jack Bourdeaux

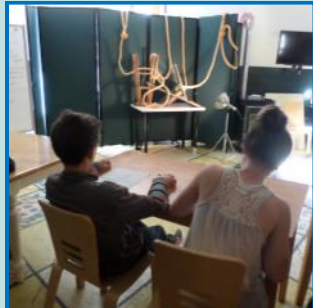
The second book we are reading this year is George Orwell’s classic, *Animal Farm*. It is a timeless story, meant as a political allegory for communist Russia, but relevant all the same in the present. In the book, a farm in England is overrun by the animals that live under the tyrannical control of the farmer, Mr. Jones. After they throw out Jones, a totalitarian state rises up out of the ashes of the rebellion. It’s sort of like an oligarchy, but not really.

At the beginning of the book a pig, named Old Major, gives a speech to all of the animals about the principles of Animalism, which he believes will inspire the rest of the animals into rebellion against the humans. Shortly after the meeting, Old Major dies and the animals rebel in the following days.

Eventually, the farm is being led by two pigs, Napoleon—who represents Stalin—and Snowball—who represents Trotsky. Napoleon subsequently drives out Snowball with a pack of dogs that he had raised for the “good of the farm.” Napoleon then makes himself the leader—read dictator—of *Animal Farm*, as the farm is now called. Napoleon and his lieutenant, Squealer, use propaganda techniques and scapegoating to assert themselves on top of the metaphorical food chain.

The book is the first classic that the class is reading this year, although after this, we will be reading Charles Dickens, *A Christmas Carol*.





Garden Expansion - Jack Newhouse

One of our many projects at Millstream Farm during the fall was garden expansion. The garden, where we grow all of our produce, was not entirely used, as weeds and tough vines had consumed half of it. We took it upon ourselves, however, to turn this neglected area into useful garden beds, nearly doubling our growing capacity.

Our first task was to remove the weeds. I would go outside each day during my projects time (a period of time when we do work on the farm) in the afternoon, and collectively with the effort of everyone else, and the tractor of course, this task was accomplished in a surprisingly short amount of time. Next, we had to carefully measure out where the garden beds would go; this was a long and tedious process. We began by taking a tough cord and laying it out in a configuration that would best suit our needs. After several attempts, we had the correct measurements to make an efficient layout of garden beds, as well as a new area defined by sturdy logs for a compost pile. We also included a designated lane for wheelbarrows.

After completing the layout, we took it upon ourselves to build each garden bed by hand, attaching the sides with an impact screwdriver and long screws. Next, we carefully laid the beds out in their designated spaces. We added the finishing touches by digging a shallow trench for each garden bed to rest in so it would not move, and then filled them with dirt. We finished this project by beautifying the garden with mulch. This was a process where over 60 wheelbarrows of new, local mulch was placed and spread out evenly. Through the expansion project, we have created a beautifully efficient garden and we intend to take advantage of the increased growing capacity next year!



Improv - Ella Levy

In the Adolescent Program students learn a diverse range of subjects from global issues to Industrial Revolution to math and Spanish. Recently, the students have started a unit that is supporting them in preparing for an upcoming theater performance.

Steph Laffin, an educator from Backbeat City, a performing arts organization, who specializes in improv, comes to the farm on Wednesday afternoons to guide the students in improving their improvisation skills. The class practices certain exercises that encourage the students to act in spontaneous ways. The exercises are verbal workouts that test the students' speed of reaction, help them build creativity, and boost their ability to put certain words into actions. By developing their improvisation skills, the students are exercising their minds to support their acting intelligence.

As the improvisation unit comes to a close and the performance unit begins, the students at the farm feel ready to overcome the challenges of putting a play, and they feel confident with their new improvisational ingenuity.

The New Kids - Jonathan Sullivan

We just found out that two of our goats are pregnant. The veterinarian came to our barn with a sonogram machine and did a test on Daisy and Luna. Daisy is expecting two kids and unfortunately Luna has started to absorb her baby, meaning that she will not give birth to a kid. We may bring Luna to a nearby farm to try to breed her again. We are looking forward to the births of our new goats. The babies are due on March 15, 2017!

The Micro Economy - Corbett DiIulio



The micro-economy is a very fun and amusing class in the morning. During micro-e, we do things such as carving soapstone, felting sheep ornaments, making our own goat milk soap, and cooking and preserving food products such as Concord grape jelly, tomatillo salsa, and pumpkin butter. During the winter we will do more indoor things such as carving soapstone and felting sheep ornaments.

Carving soapstone is quite fun. For carving, we use a small block of soapstone and you can use it to carve either a sphere or an egg shape. After you are happy with your carving, you can polish it to bring out a shine and a smooth feel. We used baking soda to smooth the rock to its finest finish. After that, we used a tiny bit of olive oil to shine the rock. For felting sheep ornaments we use our own sheep's wool and a needle to form it into a small ball of fluff. Then, you take a third of the sheep and use the needle to make a head. Next, you use the needle to make a cross section on the bottom. You attach a leg in each of the four squares, again using the needle to bond the legs to the main body. Lastly, you can add accessories such as eyes, a mouth, and a collar.



Horses on the Farm - Atara Harrari

On our farm, we have many species of animals. We have sheep, chickens, goats, and now we have horses, too. The owners, Deb and Laura, have not always boarded their horses, Pilsner and Hercules, on our farm. Even though both of them are horses, you wouldn't believe how different they are from each other. Pilsner is a white wild mustang and Hercules is a brown draft horse.

Horses are not simple to care for. Deb and Laura come every morning and evening. When they arrive, they groom the horses, clean the stalls, change their water, and feed them. In the winter, the horses wear special blankets to keep them warm.

Even though horses are very friendly animals and don't mind sharing fields, there can be problems from time to time. The horses moved to our farm from another local farm. Both horses are retired and share a field with our sheep. Sometimes, this ends up being a problem because the sheep are afraid of the horses.

Sauerkraut - Andrea Laborde

At the farm, we make sauerkraut, which in German, means fermented cabbage. The cabbage is grown in our garden and we harvest it in the fall. Next, the cabbage is washed and chopped. We then put the cabbage in a pot with salt, juniper berries, and caraway seeds. The mixture produces its own brine. The pot is buried underground for four to five weeks. It ferments at a constant temperature of 45 to 50 degrees Fahrenheit. Then, we dig it out and put the sauerkraut in a jar and preserve it in a water bath before we sell it. It goes very good with sausages and other meats. While many people have tasted our white sauerkraut, no one has tasted the red cabbage kraut.



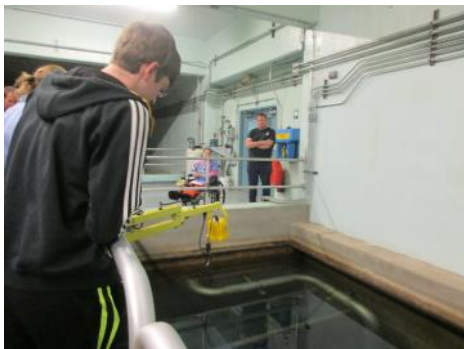
Water Occupation - Ayden Cinel

During our most recent occupation, water, we have been studying the physical properties of water, the water cycle, and water quality in the local watersheds, the physical properties of water and the water cycle being our scientific part of the class, while the watershed studies being the geographical part of the class.

In the physical study of water, we covered the polarity of water molecules and hydrogen bonds, which are the bonds between water molecules. While studying hydrogen bonds, we also studied water phenomenon including capillary action, a meniscus, surface tension, how things denser than water can float on it, adhesion, and cohesion. Our class figured out that all of these phenomena occur because of surface tension, adhesion, and cohesion. Adhesion is the attraction between like things, for example, water and water, while cohesion is the attraction between unlike things, such as glass and water. Surface tension is the strong force created at the surface of water due to the hydrogen bonds between water molecules.

During our study of the local Connecticut watersheds that supply water to West Hartford and other areas of Connecticut, we created our own watershed in class. We crumpled up paper, spread it out again, pretended that the wrinkles were ridgelines (ridges that define where water will flow), and outlined the watersheds in the area depending on where the ridgelines occurred. We then came up with an idea of where the water would go if it rained in this area. Lastly we sprayed water on the terrain and saw if our prediction was correct.

The last part of our water occupation study was examining the water cycle. We did a lab where we followed instructions to set up a lab experiment, and then recorded our observations. This particular lab was about how heat transforms water into different states of matter (solid liquid, gas) as it goes through the water cycle. We then created a storyboard of the water cycle in pairs of two, the goal being to create something that would simply, but accurately, describe the water cycle to 4th and 5th graders. Personally, I really liked water occupation. I love science, so the chemistry part of the class was my personal favorite, but I enjoyed the rest as well.



Music - Lauren Zaborowski

Music takes place in the morning on every Wednesday and is taught by Drew Chadwick. Each session begins with the students setting up the chairs from bass to soprano. We then carry on practicing or learning whatever song we have been focusing on. We learned several different songs for the Winter Sing-Along, an event at the West Hartford campus on December 23. We've learned the songs *Carol of the Bells* which is a Ukrainian Christmas carol, *Let It Be*, which is an original composition by the Beatles and is a familiar song known and loved by fans around the world, and *Somewhere Over the Rainbow*, which was originally sung in the Wizard of Oz, but we sang the version created by Israel Kamakawiwo'ole.



Printmaking - Scott Black

A few weeks ago all of the students at the farm were able to participate in printmaking. Ms. Liza, a staff member at the West Hartford campus and talented artist in her own right, guided the class. This is a form of art where the artist etches a picture onto a tablet, which is then covered with paint and used for printing out the image. We used linoleum, a type of material that is flexible and easy to carve into. For my carving, I made a tree to represent the fall, but there were many other creations such as planes, eyes, abstract works and flowers. There was a large selection of colors to use and we were able to blend colors, create gradients and scales and layer different colors. This was a very enjoyable and different art form to experience.

