By Rudy Salisbury, Afterschool Program Coordinator

This month, the Belleville Henderson 4-H Afterschool program focused on some new wellness techniques. The 4th and 5th grade students gained experience in mindfulness with the 4-H G.E.M. curriculum. During the first lesson of intentions and goal setting, participants had a fun time “chiming in” with the singing bowl. Students choose a code word and produced an individual wellness goal using visualization through a mindfulness immersion technique. One example of a goal was a participant who set the goal of helping to clean the house every weekend for the rest of 2019!

Upon moving into lesson two of awareness and intention, the students participated in a body scan. This is an activity to become mindful of the body as well as their emotions and feelings. Lesson three was all about stress reduction and relaxation and exploring kindness through a visualization technique. The children also created a mindful map to help pinpoint stressors and find new ways of relieving them.

In lesson four of communication and relationships, participants learned mindful listening by focusing in on the chime. Next was the bumblebee breath! Students loved the advanced breathing techniques, “smelling their flowers” and “buzzing like bees” to help reduce tension. The fifth and final lesson focuses on gratitude and acceptance, participants contemplated gratitude and channeled their inner whale.

Wrapping up in G.E.M. students also practiced six different posture poses, always beginning with the foundation warm-up. The students’ partner poses were wonderfully executed! As a STEAM activity, the children also made their own mindful glitter jars paired with a coloring activity using markers to represent feelings and emotions.

The program ended with a pod pow-wow, reviewing the different things that were learned along the way, while reliving the most enjoyable aspects each participant experienced. The students stated the breathing exercises and posture poses were among their favorites. They all expressed feelings of relaxation upon the reflection of each lesson.

For more info on these lesson plans go to, https://shop4-h.org/products/gem-get-experience-in-mindfulness.
Students at Case Middle School spent the month of December making their own soaps, scrubs, and bath bombs following the 4-H Try Lotions and Potions curriculum. They learned about the process of saponification, in which fats or oils are combined with an aqueous alkalai, a base, to produce glycerol and soap. The soap produced is actually a fatty acid salt that results from the fat molecules breaking up. Two types of soap were made, one using goat milk as the fat, and the other using glycerin. Before the soap was left to harden in molds overnight, they added embellishments to their creations, such as coffee beans. Students made bath bombs and “fizzies” too, where they mixed citric acid and baking soda into the rest of their ingredients. The mixture, when dropped in water, causes it to bubble as the acid and the base react with one another, producing salt and gas as a result. All of these products had the option to be scented with essential oils and dyed with food coloring. The students even experimented with the contents of each recipe. What happened if there was more or less citric acid added? Can you add more coconut oil to the sugar scrub? They solved all of these questions and more. To make the same sugar scrub, follow the recipe below:

**Sugar Scrub Recipe:**

1 cup sugar  
1/4 coconut oil  
2-4 drops of essential oil of choice (optional)  
2-4 drops of food coloring (optional)

Mix ingredients in medium size bowl. Slowly add coconut oil to sugar. You may not need whole 1/4 cup. Sugar should wet. Add food coloring and essential oil. Can be stored in air tight container for several months. Use in shower as a skin softener for rough spots or by sink for a hand softener after washing.

For more information on 4-H Try Lotions and Potions curriculum, check out this link: [https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1025&context=extension_curall](https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1025&context=extension_curall).
3-D Printing at Wiley Afterschool

By Kevin Chamberlin, Afterschool Program Coordinator

3-D printing is becoming increasingly more common in industry and private hobby. 3-D printers are able to take plastic filament from a spool, heat it up, and build layer upon layer to create a physical, 3-dimensional object. Think of a mechanically controlled, extremely precise hot glue gun. Each layer printed is usually around 100 to 300 micrometers (microns) thick!

Why 3-D print? For industry, the ability to 3-D print allows for the versatility of quickly printing original, unique parts and prototypes all with the same machine. Rather than creating new molds each time you make a modification to a part, now you can modify the part digitally and simply reprint. For hobby, the idea of printing thousands of different objects from digital designs created by others or designing your own original creation is an exciting prospect!

Harold T. Wiley Intermediate School students in 4-H Afterschool had the unique opportunity to learn about 3-D design. For three weeks, 5th and 6th grade students learned how to create 3-dimensional objects in CAD (Computer-aided Design). Once proficient enough, students were allowed to challenge themselves by creating their own original objects. Students designed objects including a staircase, pencil, suitcase, and traffic cone. After being satisfied with their computer generated designs, students were able to see them become realized in a tangible object as a 3-D printer was brought in from CCE Jefferson to print them.

For more information on 3-D printing check out Matter Hackers: https://www.matterhackers.com/articles/anatomy-of-a-3d-printer.

Crime Scene Investigation at Carthage Middle School

By Andrea Holbrook, 4-H Entrepreneur Educator

Over time there has been an increase of interest in forensic science. The crime scene investigation program allows students to explore a future career as a forensic scientist. A forensic scientist is responsible for processing evidence and assisting with a criminal investigation. The students at Carthage Middle School were able to test their skills at processing different types of evidence that could potentially be found at a crime scene. The students started the session by dealing with an eyewitness. Each student was able to draw a facial composite of a suspect based on details given from an eye witness. The students dusted and lifted fingerprints that were left around the room. We moved onto casting an imprint of a tool that was left at the scene. Students used plaster of Paris to pour into the imprint. Students then dusted and chipped away to reveal the impression they collected. Students also participated in analyzing handwriting.

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Hair structures were discussed and they were able to look at human hair under a microscope. Students did a chromatography on different pens and markers to see the different colors that make them up. Students were able to decipher how different pressure and angles change the trajectory of blood spatter. They learned about different insects being present in a body based on different stages of decomposition. Students learned how forensic scientists identify mystery substances based on chemical reactions. At the end of the session students were able to test the skills they learned by solving the big mystery. The CSI program is being offered again for session two at Carthage Middle School.

Trout in 4-H Afterschool

By Rachel Thomas, Afterschool Program Coordinator

The students in the Indian River High School 4-H Afterschool Academy are working on growing trout! This project started back in November 2019 under the supervision of 4-H Educator Kathryn Ripstein, and will continue until the spring, when the trout will be released.

The Trout in the Classroom project is an environmental education program that was developed by Trout Unlimited. They state, “Trout in the Classroom is a conservation-oriented environmental education program for elementary, middle, and high school students. Through the school year, students raise trout from eggs to fry and then release them into approved cold water streams and lakes. This act of raising, monitoring, and caring for young trout fosters a conservation ethic within participating students and promotes an understanding of their shared water resources.”

Multiple things need to be done in order to maintain healthy trout and keep this process successful. The first thing that needed to be completed was to design and build the tank (see image to the left). Kathryn states, “It is important to keep the environmental conditions within the tank as close to the natural conditions brook trout would live in if they were being raised in the wild.”
Here are a few conditions that must be followed, and how to make sure your tank is set up properly to mimic these conditions:

1. Temperature must be maintained at 50 - 51 degrees Fahrenheit to mimic the cool temperatures of creeks during spawning. Spawning occurs between the months of September and October.
   - Materials Needed: A chiller and submersible pump. The submersible pump draws water from the tank and sends it to the chiller through a tube. The chiller acts as a refrigerator for the water cooling it to the desired temperature before returning the water to the tank through a return line.
2. Water must be oxygenated. Natural creek systems, like where brook trout would spawn, have alternating areas of pools and riffles. A riffle is an area where the elevation of the stream changes and water falls over rocks turning and infusing the water of the stream with the fish need to breathe.
   - Materials Needed: An air stone and air pump. Air is pumped through a small air line through the air stone which is submersed in the water. This provides the oxygen needed for the system.
3. A safe place for the eggs: In a natural system, after mating, an adult female trout would create a redd for her eggs. A redd is a small depression in the gravel of the river bed that a female trout creates by swishing her tail from side to side. When a female is ready to lay her eggs, she does so in her red, which is a fish version of a nest.
   - Materials Needed: A breeder basket to place eggs in so they have a safe place to develop.

Other materials needed to help regulate the tank are a thermometer to regulate temperature of water, a filter (in a natural system filtration occurs through gravel and the roots of plants), and insulation to help keep water cool and reduce wear on the chiller.

The tank was set up at the beginning of November, and the eggs were received and added to the tank on November 22, 2019. The students monitor the eggs daily to ensure that they were all still developing properly, checked the tank temperature, and cleaned the tank when necessary.

Toward the end of December, the trout went from the egg stage (can see two eyes and the hint of a spinal cord; should be a light orange color) to the alevin stage (head and tail separate from egg sack; look like little fish with pot bellies. See picture to left). According to Kathryn, at this stage, “the trout do not need to be fed, as they are still absorbing nutrients from the egg sack”. At the beginning of January, the fish developed from alevin to parr. At this stage, the fish have completely absorbed their egg sack and are moving around the tank. They have developed vertical stripes on their sides that would act as camouflage against predators if they lived in the wild. These stripes are called parr lines. The fish now need to be fed daily, which consists of a size 0 food pellet. As the parr grow, they will be fed in successive stages of increasing food sizes until their release date.

The Indian River 4-H Afterschool Academy students will continue to monitor the trout and nurture their growth until the spring. In late April or early May (approximately 6 months in the tank), the parr will be ready to be released into a local DEC release site. For these trout, that means their new home will be a tributary of Black Creek in Philadelphia, NY. After two to three years, the trout reach adult size and will be ready to spawn.

For more information on Trout in the Classroom, please visit, [http://www.troutintheclassroom.org/](http://www.troutintheclassroom.org/).

If you are interested in getting Trout in the classroom set up in a school near you, please speak to your local administration, and contact Trout Unlimited at [http://www.troutintheclassroom.org/contact-us](http://www.troutintheclassroom.org/contact-us).

If you are curious about the life cycle of trout, their living environments, and more, please visit, [https://www.wildtrout.org/content/about-trout](https://www.wildtrout.org/content/about-trout).
Youth at the Copenhagen 4-H Afterschool Program are learning the benefits of doing a good deed within their community. The entire program focused on community outreach and bringing holiday cheer to the residents at Meadow Brook Terrace. Each group created a different item to bring to the center to give to the residents and put a smile on their faces.

Serving the community teaches children responsibility not only for themselves, but for other people. Through community service, children understand their actions impact others. Learning that the items they make will not be taken home, but instead be given away as a gift to bring joy to someone else is a very valuable lesson for youth to learn.

The kindergarten group made apple sauce and cinnamon ornaments. Learning to mix and lay out the dough so that a cookie cutter can be used is a tricky skill for such little hands! First and 2nd graders practiced fine motor skills while making candy cane ornaments and ripped paper wreaths. Second and 3rd graders used their creativity by choosing a design to draw and color on a wooden, precut log round ornament. They had to sand their surface to prepare it for their design. They were encouraged to use their drawing skills, which helped boost their self-confidence. Third and 4th graders made salt dough ornaments. Learning the importance of exact measurements and the order of mixing is an important skill that will last a lifetime. Waiting for them to dry, so they could paint and decorate, also taught them the importance of time management so that their projects were done on time. The 5th grade group made lavender and rice hand warmers. Youth measured the material, cut, then hand sewed the bags, which is a very practical life skill. Taking the time to teach children some simple sewing skills can save them a lifetime of missing buttons and ripped seams.

Below you will find the ingredient list for the Salt Dough ornaments the students made! We are very proud of the youth at the Copenhagen 4-H Afterschool Program and their dedication to this community service project!

Salt dough recipe

Ingredients:

- 1 c Flour
- ½ c Salt
- ½ c Water

Directions: Mix all ingredients together, roll dough, cut out and let them dry for painting.
The 4-H Wild Edibles curriculum is designed to teach children that many plants are edible and nutritious. Youth also learn how to safely identify plants that can be consumed. 4-H students at Beaver River discussed ten different plants: broadleaf plantain, dandelions, cattails, white pine, red clover, Jerusalem artichoke, burdock, milkweed, wood sorrel, and oxeye Daisy. After studying the plants, the students went outside to see if they could locate them, of course not all of the plants were on the property. Some plants had to be brought in and pictures were used for the rarer plants. Children were also taught they should not eat plants without their parents’ permission, or near anyplace that has been sprayed with pesticides and herbicides. In addition, they were taught the 1/3 rule, which means that more than 1/3 of a plant in a patch should be not harvested – this is so that the plant may still thrive in the wild. They were also encouraged to take notes and write down which plants they discovered.

The most common plant the students learned were the broadleaf plantain and dandelions. These plants grows everywhere and are highly nutritious. Broadleaf plantain and dandelion leaves can be used in a salad or eaten plain. A plant found nearly everywhere that is near water is the cattail. All parts of the cattail are edible at different times of the year. Students also learned how to prevent scurvy with White pine tree needles. Pine needles are used to make a tea that is high in vitamin C. The cambium of the white pine tree is also edible and rich in vitamin C. Pine tree cambium can also be made into a flour for baking. Participants learned how to distinguish between red and white clover and that both are edible, but the red clover is sweeter. Clover flower heads and petals can be eaten raw, however if too much is consumed it might cause a stomach ache.

Students were very engaged in this club and had a wonderful time learning about the different plants they could eat. Numerous parents said their children were telling them about the plants they had learned about at 4-H. For more information on this topic, visit the following websites:

https://wilderchild.com/foraging-for-wild-edibles-with-kids/

https://www.farmersalmanac.com/20-common-wild-edible-plants-24920

By Scott Schulz, Afterschool Program Educator