Imagination Takes Flight in Elk Hill’s STEM Program

What does STEM education look like?

At Elk Hill Charlottesville School, it can be a robot built from a soda can. It can be digitally printed 3D models. It can even be the classic Mentos-in-Diet Coke experiment. Science teacher Kristin Quinn is showing Elk Hill’s youth that STEM — science, technology, engineering and mathematics — can be anything they imagine.

“A lot of our kids are creative,” Quinn says. “The way they think is amazing. But they’re usually not given a lot of opportunity to explore those avenues in a traditional school setting.”

Quinn encourages Elk Hill’s students to explore STEM concepts with hands-on experiments and challenges. This year, elementary-aged children figured out how to cut a single index card in such a way that they could fit their bodies through it. “We actually got three kids through one,” she says.

Middle-school students played a game based on the periodic table and tackled the magnetic car challenge, in which students use different types of magnets to make a Hot Wheels car move without touching it. A favorite activity was using the MakerBot program to make and modify designs for the school’s 3D printer. One student designed his own model jet in CAD. At the end of the year, Elk Hill students showed off their newfound passion for STEM with a science fair.

As much fun as these projects are, they’re also essential to teach Elk Hill’s students the skills they need for the future. “If they can learn the CAD system, that opens up a whole field of career and job opportunities,” Quinn explains.

Elk Hill recently was awarded a grant from CenturyLink that will enable the school to invest in a second 3D printer, as well as probeware — sensors and other equipment students can use to collect data for science experiments. Quinn intends to duplicate the Charlottesville school’s STEM programming at Elk Hill’s other schools.

It’s not just about teaching the elements of STEM, she says, “but getting them interested in learning and how to learn, in general.”
At Elk Hill Harambee School, we call chess “The Game of Life.”

Chess teaches our students to work within the constraining parameters they are given. They learn that rules dictate the initial placement and the manner in which each piece is permitted to move. As they progress as chess players, their strength in complex logic increases. Chess teaches our students that there is a direct correlation between planning and success in life.

To be successful at chess, our students are taught to practice a mental checklist before and after each move. This checklist includes questions like:

- “Are any of my pieces in immediate danger?”
- “What was my opponent planning to do with his last move?”
- “Am I protecting my pieces?”
- “Do I need to give something up in order to gain better access to my opponent?”

During a game of chess, students are consistently reminded to consider possible replies, threats and counter-threats before each move. This gives students a platform to practice attention to detail, a process of always being on the lookout for opportunities and pitfalls. Students practice developing their pieces on the board before rushing into an attack, helping them learn the importance of patience and discipline.

They also learn that they have to lose pieces in order to win the game. This assures students that it’s OK to fail, and it’s OK to lose something on the road to success. This conditions our students to build stamina and combat impulsivity, promoting emotional control for prolonged thought. This also helps give them the stamina required to take standardized tests or long school examinations.

Another skill our students learn playing chess is how to analyze their opponent. They practice the relationship of action and reaction, on a tangible platform, in a relatable way. As students get better at chess, they gain great confidence in their thinking, and learn to go “head to head” with adults in a positive manner.

Even conversing about chess builds a foundation of collaboration and respect. As our students learn “The Game of Life,” they analyze their games together and share ideas for success. Students are taught to back up their ideas or suggestions with concrete evidence, enabling them to better contribute to productive discussions.

Learning chess is much bigger than playing a game. The chessboard has become a place where students can learn life skills, practice resilience, and accept that losing is a part of winning.
“Time In, Outdoors” Helps Youth Reach New Heights

By Liz Knotts, Elk Hill Mentoring Coordinator

Sixteen-year-old Ahmann had a difficult few months in early 2018. However, as the spring break program “Time In, Outdoors” approached, he was eager to spend a week exploring, splashing and hiking.

“Time In, Outdoors” is a week-long program that gives youth aged 10 to 16 the opportunity to explore some of the beautiful trails around the Blue Ridge Mountains. Participants learn about “leave no trace” trail etiquette, fitness and nature.

Ahmann was one of three “Time In” alumni in the program, as well as the oldest mentee participating. So I counted on him to help the younger mentees stay motivated to make it to the top of the trail and stay safe during a stream crossing. Not only was he kind, supportive and understanding of his peers, his confidence had clearly blossomed, just like the buds on the dogwood trees.

Ahmann not only conquered mountains; he was able to find new coping skills, help his peers, and have fun! It was a delight to have Ahmann in our program and a genuine pleasure to see him transfer his disciplined approach to the day into being more helpful and positive at home.

Having worked with youth for over ten years in a variety of settings, including the outdoors, I’ve learned it’s crucial not to assume that a child’s behavior in any other setting is what it will be in the outdoors and not to hold them back from facing new challenges. As staff and role models, it is our job to nudge our kids beyond their comfort zone. Spending time in nature is one of the most therapeutic settings in which to do that, and helps them recognize new strengths, gain confidence, and realize their potential.

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Elk Hill truly feels like family. We visit several times a year, attend their Thanksgiving celebration and even go to the graduation ceremony in the summer — such a proud moment for the graduates, their families, and teachers and staff at Elk Hill. To realize the progress and success these children have achieved after overcoming so many obstacles in their lives makes our hearts happy!

My personal mission is to help our young men learn the simplest formula of life: “Treat people the way you want people to treat you!”

So often, our challenge is: “How on earth can we get this young person to believe in himself?” Even the most outwardly confident young person we work with wrestles with self-doubt and a certain level of self-hatred. It is hard to believe in anything if you are not sure that what you believe matters. The residential staff and I work hard to show and tell these young people every day that they matter, and that what they do counts. “I believe in you” are powerful words to a young person who has experienced multiple failures in their life. These words, heard often enough, lead to a spark, a light, a determination deep within that young person that wasn’t there before.

We’re often seen as the ones who will solve the youth’s problems; the ones who will bridge the gap; the ones who will be what they need; the ones who will accomplish, in a couple of hours a week, what their parents haven’t been able to do. While we can’t solve a lifetime of trauma in three months, we can instill a belief in themselves and in their future.

Notes From The Field

Supporting Elk Hill: A Family Tradition

By Beth Gregory Woods and William N. “Bill” Gregory, Jr.

When our family thinks about Elk Hill, it always brings a smile to our faces. When my mother, Maureen, was living, nothing brought her more joy than to go shopping with my dad, Bill, for the children at Elk Hill. They even got the grandchildren involved by letting them pick out school supplies for the new school year for the kids. Looking for cute clothes, games, toys, books, and art supplies gave my parents an opportunity to help make a difference in the lives of these special children. That’s what they were all about.

Even though my mom is gone now, when Dad and I get together on Saturdays, we are always on the lookout for things that we think the kids may need and enjoy. Many times we will choose the same item at a store and say, “This looks like something Mom would have picked out too!”
Planned Giving

The Elk Hill Society recognizes individuals whose foresight and generosity ensure the long-term stability of Elk Hill for future generations. We encourage you to consider joining a very special group of Elk Hill supporters – Elk Hill Society members. Society members are those friends who express their support for the future of Elk Hill by including a bequest or other life income gift for the Foundation in their estate plan.

It’s a simple gift that costs nothing during your lifetime – but makes a world of difference in a young person’s lifetime. Let us answer your questions! Contact: Michael Farley, CEO (804) 457-4866 ext. 311 or mfarley@elkhill.org.

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We’d love to celebrate with you!

On Friday, July 20th, at 10 a.m., we will be hosting our annual summer camp carnival at our Goochland Campus, 1975 Elk Hill Road. Please join us to see the impact your support has made at Elk Hill and celebrate the accomplishments of our youth. If you’re interested in volunteering for the day, or if you’d like to join in the festivities, please RSVP to Danée Hudson at dhudson@elkhill.org.

Together we can achieve more!

Elk Hill’s volunteer program is an exciting opportunity to make an impact, support our community, and truly make a difference in the lives of the children and families we serve.

Elk Hill volunteers come from throughout the Commonwealth of Virginia, supporting us at all six Elk Hill locations and through offsite DIY projects. Over the past 12 months, more than 500 volunteers have donated 1,500+ hours of time, valued at over $40,000. Thank you for giving Elk Hill and the youth we serve the most precious thing you possess – your time.

Interested in giving the gift of your time? Our ongoing volunteer needs are:

- Painting at residential home or school
- Outdoor beautification projects
- Gift wrapping and decorating for the Holidays
- Painting murals
- Kit assembly and off-site DIY projects

For more information please contact Danée Hudson, Development Manager, at dhudson@elkhill.org.

Connect, Collaborate, and Contribute at Elk Hill Charlottesville School’s Synapse Hub.

The Synapse Hub is a networking group, but it’s more than just networking. The “Hub” facilitates connections between businesses and nonprofit groups for community and economic development. To learn more, please visit www.synapsehubs.com or email jcocciolone@elkhill.org.

Join us on the 2nd and 4th Monday of each month, from 3-5 p.m. at Elk Hill’s Charlottesville Day School

“Start where you are. Use what you have. Do what you can.” — Arthur Ashe

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