

**Fayetteville Free Library (FFL) Completed Projects:**

**Sherlock Holmes Science and Book Club (Grades 3-5) September – December 2016 – held for one hour twice a month**

**Forensic Science Camp (Grades 6-12) Spring Break 2017 – held for three consecutive days for four hours each day**

**Sherlock Holmes Science and Book Club Recap**

The Sherlock Holmes Science and Book Club (Sherlock Holmes Detectives) is a literature and science discovery club for children grades 3-5. The FFL facilitated the club from September – December 2016. The club met twice a month for one hour and the time was split between discussing the book and participating in activities and experiments that related to the plot of the books. The club read “The Sherlock Files” by Tracy Barrett, which is a series that follows two children detectives who find out they are the descendants of Sherlock Holmes, inherit his casebook, and then set out to solve his various unsolved cases. Participants read from the assigned book in preparation for the program. During the first half hour of each meeting, participants discussed what they read. During the second half hour, the club conducted a simple experiment related to what was read. The club was free of cost and open to the public.

Each session, the first part of the program was focused on discussion. This included discussion of the book, general discussion of Sherlock Holmes and detective strategies, methods, etc., and Sherlock Holmes stories that may relate to the books (for example, the second book in the series features a supposed beast tormenting a small town, so we discussed The Hound of Baskervilles). We also made sure to discuss the differences between the modern day methods and gadgets found in these books and tried to compare/contrast them to original Sherlock Holmes stories to see how these characters were similar or different to Sherlock Holmes.

The first month we read “The 100-Year-Old Secret.” In this book, the children first have to follow clues to a secret meeting place where they find out they are related to Sherlock Holmes, and then attempt to track down a famous painting that has been missing for more than 100 years. The book starts out with the children receiving a note that features disappearing ink, so for our first activity, we made our own invisible ink pens and tested them out by creating secret notes. For our second activity, the children had to locate several clues hidden around the library by solving riddles. Then they had to analyze the clues to figure out the code to combination lock, where they then “discovered” a missing painting that had been hidden.

The second month, we read “The Beast of Blackslope,” which features a small town terrorized by a supposed beast. One of our activities this month focused on general detective skills. We tested our memory with different games and activities and discussed tools and technologies that might be helpful to us as detectives. After learning and discussing traits a good detective would have, we attempted to write our own short detective stories. We learned about various aspects of mystery stories – like a red herring, which was featured in this book – as well as how to build the parts of your story to include characters, plot, motive, clues, conclusion, etc.

This month we also conducted an experiment with fiber analysis. The participants were presented with several control samples of different fabrics and fibers, and then were also given pieces of “evidence” that had been found at various crime scenes. Working together and using magnifying glasses, the participants were tasked with matching each “evidence” piece to one of the control pieces.

The third month we read “The Case that Time Forgot,” which features various codes and riddles. We learned about several different types of codes, including a Caesar cipher, a block cipher, a pigpen code, scytales, and more. Participants first solved secret messages they were given, and then they spent time creating their own secret messages to one another. We also learned about hieroglyphics and tried some activities related to those as well.

The final month we read “The Missing Heir,” in which a friend of the main characters is kidnapped. The book features handwriting analysis, fingerprinting, and DNA analysis. For the activities this month we first focused on handwriting analysis. We discussed the different methods and the use of handwriting analysis as a detective tool, both historically and currently. The participants learned how to analyze handwriting by each writing a message, trading papers with others in the group, and then trying to figure out who the paper belonged to based on the handwriting. This month, we also discussed DNA analysis and how the events in the book we read would have been very different from a Sherlock Holmes story because of the time periods. We also discussed fingerprinting, learned about the different styles of fingerprints, and practiced taking fingerprint samples from objects and each other.

While it was sometimes difficult to get participants to start discussing the books during the sessions, the participants were always excited and engaged when we discussed if we thought we would be good detectives, what our strengths would be, what methods or tools are available to people today that someone like Sherlock Holmes might not have had access to, and so on. While the science experiments and various detective-themed activities or puzzles were a big hit, we were also surprised at how excited the participants were for simpler activities like testing their memory and observation skills, discussing the common thematic elements of mysteries, and practicing creating their own detective and mystery stories. There were some

participants who were already familiar with Sherlock Holmes and some who were not, but many participants expressed interest in the books (as well as Sherlock Holmes in general) and were eager to take home the next book each month. After the series concluded, we decided to keep several copies of each book in the library collection, and kept the rest of the copies for use for possible future programs.

### **Forensic Science Camp Recap**

The Sherlock Holmes Forensic Camp is a 3-day camp that was held during spring break 2017. The camp met for 4 hours each day. Participants spent a portion of each day discussing the text they read in preparation for that day's activities. They read the following Sherlock Holmes stories: "The Adventure of the Dancing Men," "The Reigate Puzzle," and "The Adventure of the Norwood Builder." The camp was for teens in grades 6-12. The camp was free of cost and open to the public.

They also learned about the science of Sherlock Holmes through hands-on experiments and activities. Activities included: a fingerprinting activity, experiments with known powders to identify unknown powders, handwriting sample analysis, chromatography to identify the writing implement used on a piece of evidence, selective attention and memory activities, and a microscope activity to view and identify cat, dog, and human hair. In the final activity, participants solved a crime using skills they learned during the camp including fingerprint identification, hair analysis, and chromatography. All of these activities were connected to the stories that the group read as well as the Sherlock Holmes character.

Syracuse University's graduate program in Forensic Science has an organization called Code Orange. They organize forensic science events and provide tours. The university is a twenty minute drive from the library, and the organization was excited to participate in the camp. Three graduate students from the organization presented a crime scene activity involving a heroin overdose. Participants had to complete several activities in order to solve the crime. Participants investigated a "corpse" (a student pretending to be dead) to determine both the time and cause of death. This was one of the best enjoyed activities for the camp participants.

We plan to utilize the remaining books in the library's collection and possibly for other programs in the future.

## Outcomes and Goals

When the FFL applied for grant funding, we compiled the following list of outcomes and goals for both programs:

**Participants will develop an appreciation for the work of Sir Arthur Conan Doyle (and related works).** Many learned something new about Sherlock Holmes' character and world. Many participants enjoyed the stories and some were exposed to Sherlock Holmes stories for the first time.

**Participants will improve their reading comprehension skills.** Each meeting included reading and discussion of the text. Sherlock Holmes Detectives were asked to write their own detective and mystery stories.

**Participants will improve their critical thinking skills.** All participants worked through activities and experiments where critical thinking skills were developed and exercised.

**Participants will collaborate with others to learn and solve problems.** All participants worked in groups to complete experiments and solve problems. They all collaborated and shared equipment to accomplish this.

**Participants will understand how the works of Sir Arthur Conan Doyle are relevant today.** Both groups discussed real life, current day crime solving and detective work. Participants learned that many of the techniques Sherlock Holmes used remain relevant today.

**Participants will learn about forensic science its concepts.** (Forensic Science Camp only) Participants learned about and completed activities in the following areas: handwriting analysis, powder identification using chemistry, chromatography, fingerprint analysis, ciphers, and hair identification, and more.

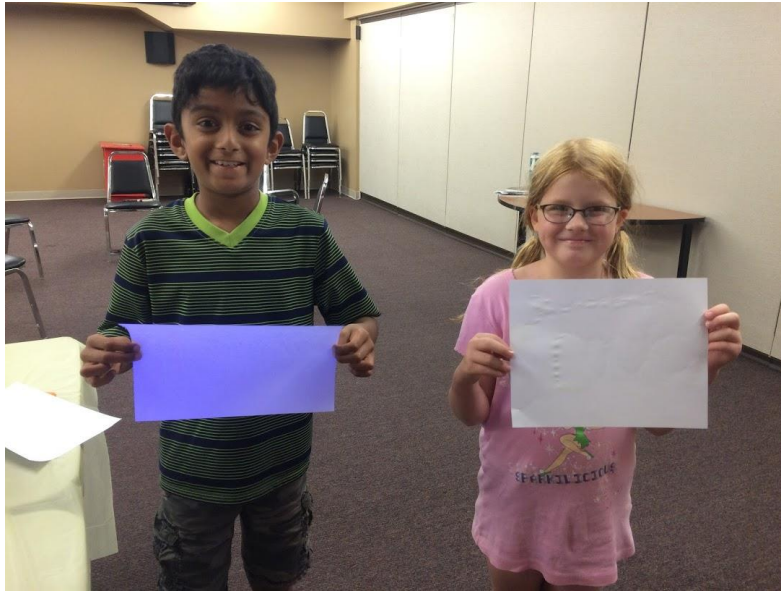
All of the project outcomes and goals were met.

**Impact on the library:** Thanks to the Beacon Society grant funds, the FFL was able to add two excellent programs to the calendar this year. Both of the programs were high quality, informal STEM learning opportunities, which are highly valued by the community. By providing excellent programming that the community values and enjoys, the library is able to prove its value. The Beacon Society was integral to this effort.

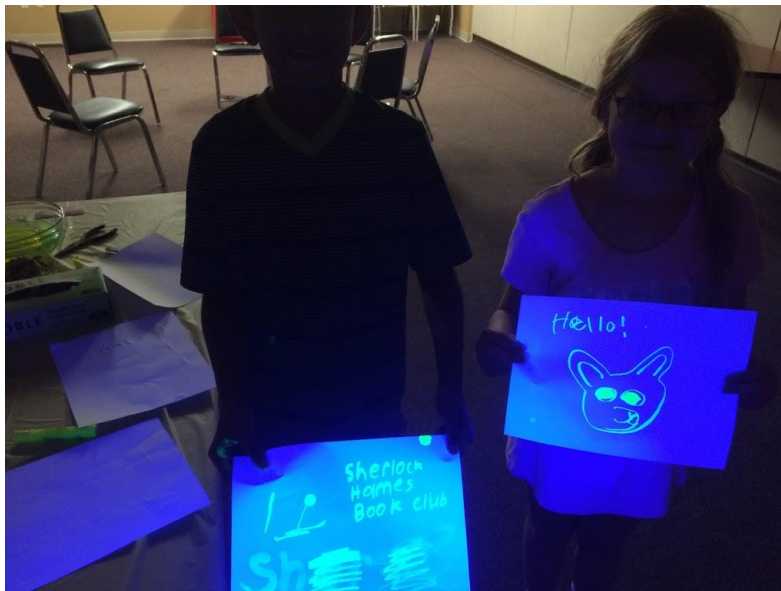
**Impact on the participants:** Thanks to the grant funds, the participants were able to engage in informal STEM activities. Everyone learned a lot about literature, Sherlock Holmes, science, and experimentation. Many of the attendees expressed that they had fun reading and

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discussing the books and learning science concepts. The older attendees expressed that they enjoyed the activities with puzzles and problem solving. Some mentioned that they will consider pursuing careers in forensic science in the future.



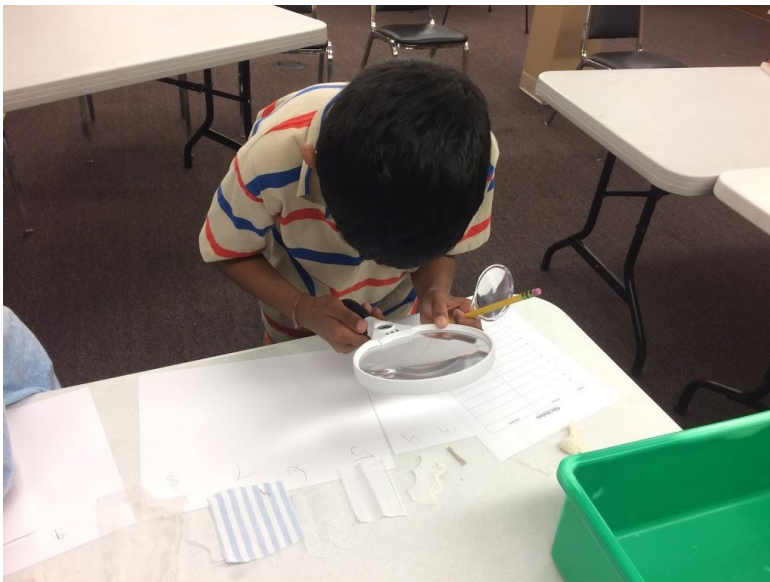
Invisible Ink Activity (Sherlock Holmes Science and Book Club)



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Sherlock Holmes Science and Book Club



Crime Scene Activity (Forensic Science Camp)



Crime Scene Activity (Forensic Science Camp)





Crime Scene Activity (Forensic Science Camp)

*Grades 3-6!!! Try your hand  
at being an amateur sleuth!*



# SHERLOCK HOLMES DETECTIVES



**Do you love science and discovery?**

**Do you like to experiment  
and try to solve mysteries?**

**Then this is the perfect program for you!!**



We will be discussing *The 100-Year-Old Secret* from The Sherlock Files series.  
No worries if you haven't finished the book you can still take part in the program!  
Space is limited registration is recommended.

**Alternate Wednesdays through December 7**  
**Next class: October 26 at 4:00 - 5:00 PM**

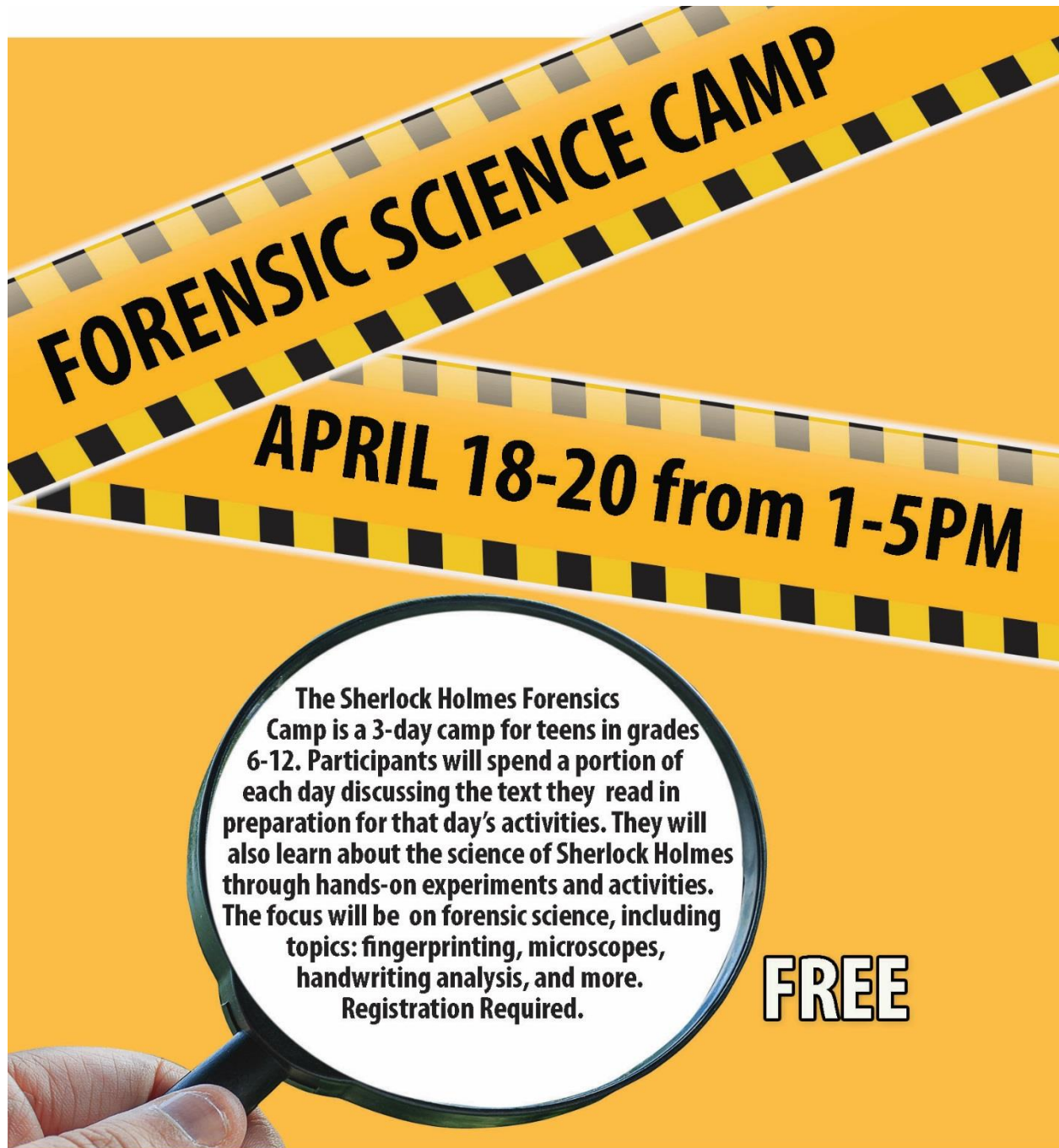


Support for this program is provided by the Jan Stauber Grant Program of the Beacon.



300 Orchard Street Fayetteville, NY 13066  
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**FORENSIC SCIENCE CAMP**

**APRIL 18-20 from 1-5PM**

The Sherlock Holmes Forensics Camp is a 3-day camp for teens in grades 6-12. Participants will spend a portion of each day discussing the text they read in preparation for that day's activities. They will also learn about the science of Sherlock Holmes through hands-on experiments and activities. The focus will be on forensic science, including topics: fingerprinting, microscopes, handwriting analysis, and more. Registration Required.

**FREE**

Support for this program is provided by the Jan Stauber Grant Program of the Beacon Society.



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