

**Project Title:**

All About Arsenic

**School:** Conners Emerson School

**Grade Level:** 8th Grade

**Your Name:** Lynn Hanna

**Project Partners:** Jane Disney and Sarah Hall

**Teacher/Scientist Partner Profile:** I am a 7/8th grade science teacher who teaches both life and physical science. I have been teaching for about 17 years, starting in 1993, but took a few years off to raise my two children who are now 22 and 25. I have a biology degree along with an K-8 education degree. I have just discovered backcountry camping, hiking, and fly fishing which have become a new passion for me. In school I am passionate about making the science classroom exciting and “different” than a lecture hall. I am interested in the All About Arsenic project because I want my students to be a part of gathering data that means something. A real life experience.

**Summary:**

All About Arsenic is used in my chemistry unit for the 8th graders. Students collected 23 samples this year. While we waited for the samples to be analyzed students studied the elements that Dartmouth is analyzing for: arsenic, antimony, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, thallium, and uranium. Students chose an element and researched about that element. Students then put together an element baby book which they share with the rest of their class. The research included the atomic symbol, mass, and number. Students also researched who discovered the element, the type of element, and state of matter. They also research about what health impacts the element has. This year the Town of Bar Harbor heard about our project of offering free well water testing and decided they would like to offer free well water testing to all residents in Bar Harbor on wells. Jane Disney and I worked with Michael Gurtler, the Town Health Officer. Using the story maps on the All About Arsenic site students researched information about arsenic including what is arsenic, health risks of arsenic, where is arsenic found, recommendations for arsenic limits, and data on arsenic that has been collected in the past. Students met with Sarah Hall, from COA, in a small group setting to go over the information and talk more about what they had discovered. Students then created some way to share this information with the townspeople either through a trifold poster, a flyer, or a letter to the editor. The posters and flyers were on display at the Town Office for the November 2nd voting day. The Town collected 36 samples and hope to continue this next year.

**Project Details:**

- 40 students were involved in this project.
- Element Baby Book Form for students: [https://docs.google.com/document/d/1ZwYqp5nqdA8TIGNP4QVx2CDxfoiZRpqTklH66DKQ\\_tM/copy](https://docs.google.com/document/d/1ZwYqp5nqdA8TIGNP4QVx2CDxfoiZRpqTklH66DKQ_tM/copy)
- To learn more about where arsenic comes from we took a field trip to Schoodic Institute in Winter Harbor where Acadia National Park rangers discussed the rock formations on Mount Desert Island.
- Sarah Hall met with small groups of students to help guide them through the All About Arsenic story map information for students to use in their trifold/flyers/letters to the editor.

- Students were introduced to Tuva by using an intro lesson to get them more familiar with using this tool. Then we analyzed data from the years past about arsenic and the other elements that were being tested. And finally, students used Tuva to create graphs and gather information for their trifold/flyers/letters to the editor.
- Students created trifolds and flyers about arsenic and its' health impacts of arsenic. Other students created letters to the editor to share with the community that the Town of Bar Harbor would be offering free well water testing and sharing how important it is for townspeople to test their water.
- The Town of Bar Harbor collected 36 well water tests from students outreach.

**Discussion:**

Students always enjoy the element baby book. This is a creative way for students to research information. This year students were more involved with research than in the past. I believe this is because we were involved with the Town of Bar Harbor and their mission. It was a great for students to be a part of a town-wide initiative. Students were experts in arsenic by the end of this project.

I learned that could spend 8 weeks on this project. Students were engaged and committed. I was unable to do any labs this year which is something I am looking forward to doing different next year. I would like to bring back the testing of different water filters and do a bioassay next year. As for community outreach I am hoping to encourage students to attend a town meeting this year to discuss the All About Arsenic Project.

**Conclusion:** This is an amazing project. I was proud of where we went this year in the All About Arsenic Project. Connors Emerson students learned about arsenic and other elements being tested. Students then took that information about arsenic and created trifolds/flyers/letters to the editor to share with the community the impact and importance of testing for arsenic. I look forward to expanding this unit next year.

**References:**

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