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Latham Science Communication Project

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# STEM Education

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# STEM Education

By: Sarah Gardner, Maria Nunez Hernandez, & Sai Nikita Tummala

It was determined through the literature that exposure to science early in a child's education causes an increase in STEM. Also upon reflection as a group, we all could recall specific engagements as children that made us interested in science. So, we wanted to provide this for current students starting their STEM education. Our goal for this project was to get kids excited about science and learning about it. If we could make science fun they would more likely enjoy learning about it and get involved in science. Our target audience was kids in kindergarten through middle school. To be more specific, one of our activities was targeted at kindergartners specifically and the other activity was focused on kids that were between the grades kindergarten through middle school.

Upon discussion with our advisors, we discovered that STEM nights were already a common activity in the greater Iowa City area that would provide an atmosphere for the outreach that we wanted to practice. We contacted many different schools and community groups to get more information about where and when these STEM nights occur. The initial goal of the project was to bring many different hands-on activities that would engage K-6 students in these STEM nights. However, upon logistics discussions, it seemed that all three of us engaging our audience on just one activity would be the most effective. We had developed a couple of different activity ideas based on our interests. We determined which activity would be best for our project based on the age of our audience and their scientific knowledge.

For one of the activities we went to a Science Night event that is held yearly at Penn Elementary in North Liberty, Iowa. At the event we had our own booth where we could set up our own activity for the children that attended the event. Here we had an activity where the kids could design their own cells using cookies and various other candies to represent the organelles inside an animal cell. This activity provided a hands on, fun way for the kids to explore what we are made up of, cells.



*Image: Latham table at Penn Elementary Science Night.*



*Image: Cell cookie*

The other activity we had was for a much smaller group at Lucas Elementary in Iowa City, Iowa. Here we did an activity called the Mystery Box with a small classroom of kindergarten students. We had a small shoe box which we had covered up with only a small opening at the top so that it wasn't visible what was inside it. The activity involved

the children trying to determine what was in the box by following the steps of the scientific method. We helped them by walking them through the different steps so they could make observations, a



hypothesis, think about experiments they could do and finally test their hypothesis to see if they were right. In the end they were able to determine that what was in the box was fruit snacks and they got to keep and eat them. Both the activity were face to face.

We started by working with Penn Elementary at their annual STEM night. They allowed us to graciously hold our own table for their STEM night. We worked this out through the help of our advisors. Our second project partner was Lucas Elementary School who we got connected to through our Latham coordinator, Brinda Shetty. Here, we worked with one of their kindergarten class in implementing our mystery box. These two schools were our biggest partners in helping finishing our project.

For our activity, we know that we reached at least 120 kids because we bought 120 cookies to decorate and they were all finished by the time our activity was over at Penn Elementary. But, with this particular activity, our impact might have been broader because kids were really excited about decorating the cookie as a cell. This meant that they were spreading the messages to their friends and other kids as well. Additionally, for our activity in Lucas Elementary, our impact was 20 kids because that's how many kids were in the kindergarten class. But, we also think that these kids also spread the word to their other friends.

This project would be easy for other cohorts to continue because we have already established connections with different STEM nights in the community. And, increasing these connections and opportunities to engage will be easier to find with the help of Lori and Brinda.

We realized from this project that smaller children are some of the most interested in science, so being able to communicate our excitement about science with them is very important. Although we had everything planned, once we were there things didn't turn out exactly as we expected so we had to improvise. From this we learned that being flexible and being able to improvise is important especially when it comes to explaining the science of what we were doing. Being able to adapt our explanations of the science was important because we had kids from a variety of backgrounds and ages and their knowledge differed so we had to change our explanations accordingly.