

# Pollination in Action



## Introduction

Working with the community can be a vital way to communicate the importance of climate action and the different types of actions that can be taken to mitigate climate change. The California State University, Monterey Bay (CSUMB) students of Environmental Studies class: Projects in Environmental Education, worked within the local community to do just that. Los Arboles Middle School (LAMS) in Marina, California, is located in a small city that is surrounded by beautiful beaches and native habitats. This project we set out to accomplish is a part of the Senior Capstone at CSUMB. For Environmental Studies students, this meant trying to make an impact within the community.

LAMS has chosen to bring a small part of that surrounding nature into their school and create an “outdoor classroom”. The outdoor classroom has been a site that has been created and made better throughout the years in a way that facilitates students learning about their environment and encouraging a passion to advocate for the environment. Using this amazing tool was a main vision for CSUMB students. After getting to know the LAMS students we all split into small groups, four in total, to work on focused projects pertaining to climate action and getting the students to connect with the environment. There was a student voice group, a green wall group, a group focused on planting native berry flora, naming themselves as Berry Edible, and then there was our group, the Pollinators.

As a small group, our goals consisted of: teaching the LAMS students the roles pollinators play in the ecosystem, explaining to students how pollinators are affected by climate change, and giving students a sense of purpose in their local community. With the main goals in mind we set out to educate the students about climate change and sustainability and how it affects the pollinators



we were studying. Teaching the students about how climate change and climate action has influenced our project was vital in their understanding and our impact on their environmental stewardship mindset.

Connecting with local communities is a large part of producing positive change for sustainability as well as general wellness in those spaces. In many cases, however, we often overlook one of the most vulnerable members of these communities, the children. This is a point brought up in the article “Reshaping our world: Collaborating with children for community-based climate change action” (Trott, 2019). Children, despite being key stakeholders in climate engagement, were often left out of the conversation as a force for change. That said, it also said that having them participate in climate action projects resulted in kids gaining a sense of agency and awareness of their ability to improve their communities.

In addition, Singleton’s article “Head, Heart and Hands Model for Transformative Learning” informed us that giving people a sense of belonging is vital for transformative learning and community development, and that keeping activities tangible and local improved the learners’ understanding of the subject and why it is important (Singleton, 2015). The paper also provided us with the framework that we and the other project groups utilized to shape our lesson plans for our time spent with the middle schoolers. We had the Falcons reflect on the tasks they completed after every meetup with them to expand their perception of the concepts laid out and to encourage critical thinking, fitting into the cognitive—head—domain. Our curriculum also involved us interacting with the students in ways that would get them to open up and tell us what their previous connections to nature were prior to us getting involved, engaging the affective—heart—domain. Finally, the consistent psychomotor engagement—that is, engaging with the hands domain—was implemented to manifest the concepts we had gone over prior to entering the outdoor classroom area into something the students could physically interact with and have some level of direct control over.



## Project Overview

Our project focused on the crucial role of pollinators in our environment. By engaging students with these important creatures, we were able to teach them about the essential relationship between native plant species and pollinators, as well as their significant impact on climate change. Through our efforts, students gained a deeper understanding of the importance of sustaining pollinators and the role they play in maintaining a healthy and sustainable ecosystem. Our specific project goals were to:

- Learn about native pollinators
- Learn about native pollination plant species
- Learn how to plant and care for native plants
- Learn about the butterfly life cycle
- Create a sense of community
- Inspire students to take climate action

Our group had multiple projects throughout the semester. They were:

- Paint hummingbird feeders
- Plan and prep garden
- Plant native plant species and tend plants
- Observe caterpillar to butterfly lifecycle
- Release butterflies to pollination garden
- Paint rocks to label native plants
- Refresh interpretive signs
- Build a pathway through the garden (CSUMB students only)

Our group utilized a variety of engaging methods to provide a comprehensive learning experience for our students, encompassing cognitive, emotional, and physical engagement. One method we used was observing pollinators in the garden, allowing students to slow down and appreciate the natural world around them. This early activity helped to create a connection to the focus of our work throughout the semester.

Another engaging activity we did was painting hummingbird feeders. This activity not only allowed students to engage with their hands, but also fostered community building and encouraged bonding among the students. This activity allowed for natural conversations and provided an opportunity for the students to connect on an emotional level.

Our students also learned cognitive and measuring skills in planning and prepping the garden, which included using their feet to measure distances between plants. The physical planting allowed for the utilization of locomotor skills, tool handling, and spatial awareness skills. Students learned the importance of plant care and watering, which are crucial components in creating a healthy ecosystem for pollinators.

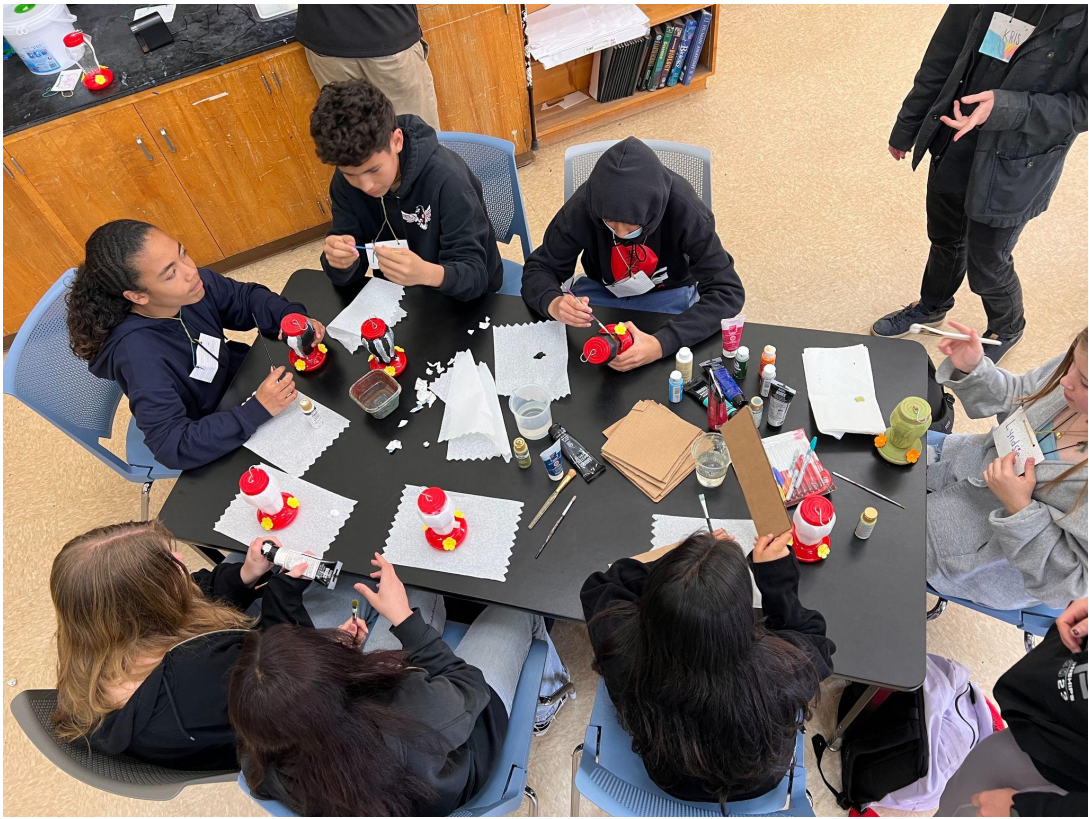
We also brought in live caterpillars for students to observe in their classroom, providing a concrete example of the butterfly life cycle. By the end of the semester, students were able to release painted lady butterflies into the garden and on the native pollination plants they had planted.

Our students also painted, labeled, and decorated river rocks to be displayed in the garden, while researching and learning about their specific plant. This activity allowed for artistic expression and cognitive learning. Additionally, our students were able to refresh an interpretative sign in the garden, further emphasizing the connection between our work and the larger community.

Lastly, CSUMB students built a pathway through the garden with pavers, improvising with materials that were donated by Granite Rock. This project was a hands-on activity that required physical effort and collaboration.



Overall, we provided a variety of engaging activities that allowed for cognitive, emotional, and physical learning, emphasizing the importance of creating a healthy ecosystem for pollinators and connecting with the natural world around us. All of our learning outcomes were achieved.







## Project Outcomes

Overall, our project stayed quite close to our original proposal. Our vision was to create a pollinator garden to help empower students to make positive changes in their community and take an active role in addressing threats posed by climate change and environmental degradation. Based on feedback from our original project proposal, we found many of the LAMS students didn't have strong background knowledge of what pollinators are and why they matter. Many seemed apprehensive about the idea of attracting bees, and suggested we focus on other pollinators, such as hummingbirds and butterflies, which we did. We found they also seemed more interested in projects such as making hummingbird feeders or bee hotels, and so we shifted our focus to incorporate more creative work. Because of this feedback, we chose to paint hummingbird feeders over creating a bee hotel, and grew and released Painted Lady butterflies to help foster connection to pollinators. We also had to accommodate our plans due to restrictions from the site director, for example, planting our garden in one location in the outdoor classroom as opposed to in planter boxes around campus due to watering constraints.

Although the core of our project stayed the same, on a day-to-day basis things rarely went exactly according to plan. This project taught us a lot about flexibility, as there were many times when we had to be open with our plans because it was unclear what we may or may not be able to accomplish in a given day. There were some days when we ran out of time to accomplish all we had planned, such as researching native plants, so we pushed it off to our next meeting. We had intended to refresh an interpretive sign in the garden that a previous class had made in 2019, but we ran out of time to add very much detail. In addition, one of our goals was to build a pathway in the outdoor classroom, as several of the students had expressed desire for one in the early days of our meeting with LAMS students. We were able to secure a generous donation from a local company, Graniterock, but were unable to get it delivered until after our time with the students had ended. Several of our CSUMB peers from different groups decided to stay with us, and we spent an hour transporting pavers to the outdoor garden and laying out a pathway as a final surprise for the students.

## *Student Insights*



Our project often exposed students to new activities: a majority had never planted a garden or painted before, but were excited about the experiences. Only one student, Lylah, stated that she had prior experience gardening. Although the students were initially wary of getting dirty, they stepped up to the challenge, took initiative and needed little direction after the initial planting tutorial. They were excited to return to the garden to check on it and water it week after week. Kayden, Eesa and Mario were excited to use the hose, and would take turns and argue over who was allowed to water which plants. Likewise, a majority of students expressed interest in painting for the first time, decorating both hummingbird feeders and river rocks which would serve as interpretive signs for the flowers they had planted. On days when we engaged their creative sides, a majority of students expressed that was their favorite part of the activities.

Growing and releasing the butterflies was another activity which really sparked student engagement. Each week at the beginning of class we would check on the caterpillars, and one student, Lyndsie, took particular interest in them. Students were excited to see when the butterflies had emerged from their cocoons and it was time to release them. Although a majority of students were wary about touching the butterflies, Lyndsie and Lylah each held one and were interested in looking at it up close. Lyndsie was very willing to get her hands dirty throughout the course of the project. When we needed to rebuild wells around the newly-planted flowers, she volunteered despite not having gloves on hand. She was very excited to talk with the college students and always seemed very engaged in whatever was going on.

Although we modified our lesson plans based on what the LAMS students seemed most receptive to and engaged in, it wasn't always easy to tell if every student was truly engaged. Some, like Alexa, were very quiet. She went from reporting very little understanding or fun in our first weekly survey to the highest possible fun and understanding scores by the end of the project. Over time she grew somewhat more comfortable and would laugh and joke with the other LAMS students. Eesa had a lot of energy and could easily grow distracted; he connected a lot more to hands-based learning than head- or heart-based projects. In his weekly surveys, like many of his peers, he wrote that this was the first time he had planted or painted. As educators, it's not always easy to tell if every student is really engaged or if they're getting as much out of the experience as you hope for. At the end of our time together, the LAMS students gave us thank-you cards. Eesa's stood out as he expressed how much fun he had with the projects and "helping the Earth," and his desire to "make the Earth a better place for us humans, which you guys inspired me to do."



Dear college students, thank you for spending your time here at LAMS and teaching us how to plant. I really had fun drawing and planting and watering. I also enjoyed going outside and helping the Earth. I am thankful for your guys time and effort you put into this for us, and I hope to make the Earth a better place for us humans, which you guys inspired me to do. From-Eesa.

*Image of the inside of Eesa's thank you card.*

Although the students clearly showed pride in their hard work in the garden, outside of what they had accomplished there, they seemed largely disconnected from their school. They expressed some frustration that they usually weren't allowed into the outdoor classroom. Students were also far more engaged in hands-on activities and projects outside of what felt like 'normal school.' We found more formal teaching, like reviewing what pollinators are and what they need, to be less engaging than hands-on education like witnessing the butterfly life cycle for themselves. Although they were very wary of us in the beginning of the semester, the LAMS students grew more comfortable around us over time. At one point, Zoey expressed that one of her friends was jealous that she was able to work on this project in favor of her usual science lectures, and stated she would miss working with us when it was over. A very touching moment was when Lyndsie showed us that she had made a design on a popular print-to-order website, with stickers and hats for the LAMS x CSUMB Pollinator Garden Collaboration.

### *Data Assessment*

Our main method of evaluation was surveys, with one distributed weekly and a longer version regarding environmental thought distributed at the beginning and end of our work together. Our weekly questionnaire assessed understanding, fun, whether the students used their head, heart or hands the most, and something they learned or enjoyed. Understanding and fun were assessed on a likert scale of 1 through 5, from no understanding/no fun to very well understood/very fun.



## Average Understanding and Average Fun Scores Over Time

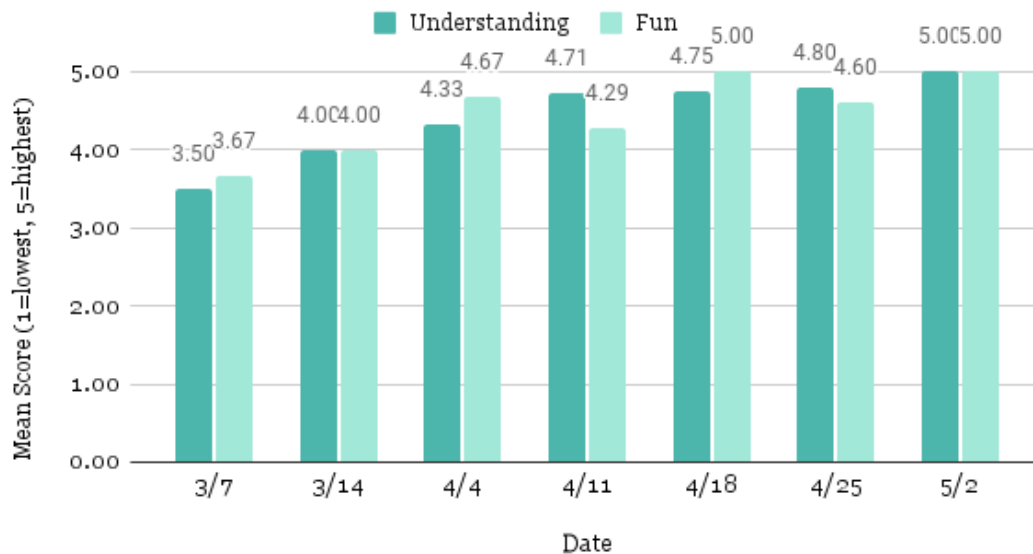


Fig. 1. Average understanding of lesson content and average fun score. 3/7 through 3/14 reflected scores during classwide lessons, including tree planting and project pitches. 4/4 was the first day we split into our smaller project groups, and remained in these groups until the end of the semester. N=7.

We found that understanding and fun scores were notably lower in the beginning of our time together, when we were doing projects as an entire class. They increased when we broke into smaller groups based on which projects the students expressed interest in. Student understanding and fun trended upwards over time. Our hope in tracking how much fun the students were having was to see if fun would correlate with learning or engagement. Overall increases in fun tended to correlate with overall increases in understanding the material.

Comparison of Pre- & Post-Survey Attitudes (N=22)

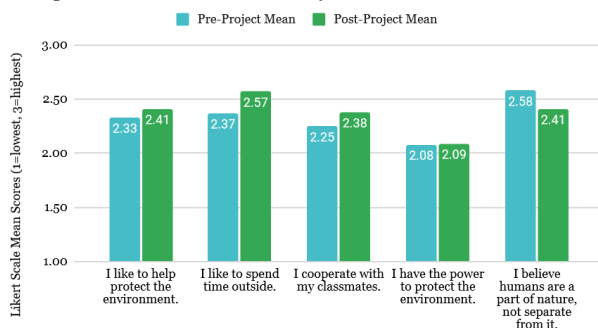


Fig. 2. Comparison of average classwide agreement with key questions pre- and post-project.

Comparison of Pre- & Post-Survey Averages: Pollinators

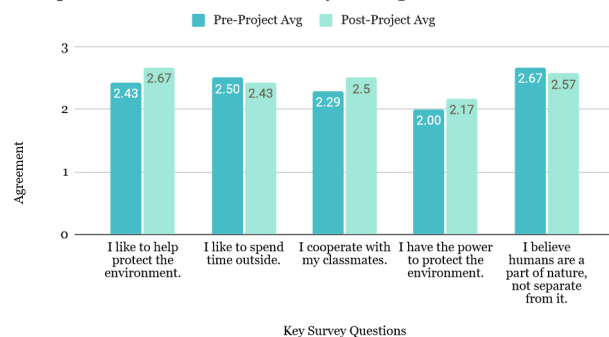


Fig. 3. Comparison of average agreement with key questions pre- and post-project for students in the pollinator group only.

For the longer pre- and post-project surveys, we analyzed five key questions and how student affinity with them had changed over time:

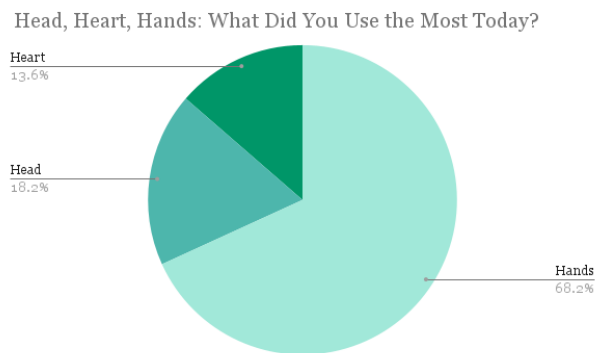
1. I like to help protect the environment.
2. I like to spend time outside.



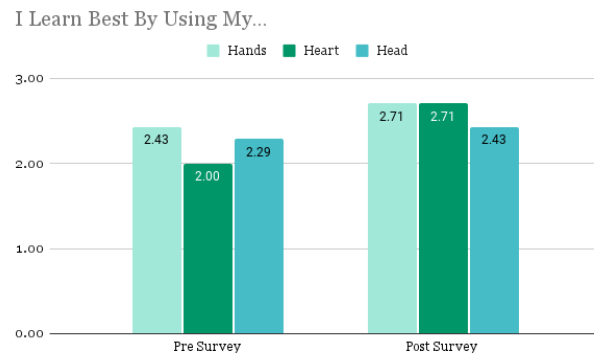
3. I cooperate with my classmates.
4. I have the power to protect the environment.
5. I believe humans are a part of nature, not separate from it.

Answers were multiple choice and could be reported as Never True (coded as 1), Sometimes True (2), Mostly True (3), and Does Not Apply/Not Applicable (4). In our classwide survey analysis, we found that there was an increase in agreement with the first three statements. Likewise, the pollinator group also expressed an increased affinity with the statements 1. “I like to help protect the environment,” and 3. “I cooperate with my classmates.” They corresponded with the classwide decrease in agreement with the statement 5. “I believe humans are a part of nature, not separate from it.”

However, pollinator students were more likely in the post-survey to agree with the statement 4. “I have the power to protect the environment,” which decreased slightly in the classwide average. Unlike the larger class, which increased agreement with the statement “I like to spend time outside,” pollinator students slightly decreased their agreement between the pre- and post-surveys.



*Fig. 4. Did Pollinator students use head, heart or hand the most throughout the course of the project? Hands was the overwhelming winner, reflecting the number of hands-on activities we engaged in.*



*Fig. 5. Pollinator students rated whether they learned best using their head, heart and/or hands at the beginning and end of the project, and expressed growth in all three.*

Part of each survey included questions about whether students felt they engaged their head, heart or hand the most, in accordance with Singleton’s model. In the weekly surveys, students overwhelmingly reported using their hands the most, and heart the least. One question raised by our findings was whether the students fully understood what the “heart” category meant. It was unclear if students listed it the least often because they didn’t often have emotional connection as the primary outcome of activities, or if they didn’t fully understand that “heart” related to emotional connection. In the post-project survey, the question was changed slightly from the weekly survey. Instead of asking “Which did you use most today?” the questions were “I learn best by using my hands; when I feel emotionally connected; or when I am using my brain.” The difference in phrasing led to an increase in student affinity with the statement “I learn best by using my heart” between the pre- and post-survey. It may be beneficial in the future to clarify in the weekly survey that using your heart means making an emotional connection to the learning material.

Qualitative Responses				
	What are some environmental topics and terms that you have learned from the action projects?	What was your favorite activity this semester and why?	What is a skill that you learned from your individual action project?	What kinds of actions do you want to take to address climate change?
Alexa	I learned how to plant plants	Painting rocks because I like painting	How to plant	Nothing
Eesa	I learned how to plant.	Painting a bird feeder.	I learned how to plant.	I want to plant more plants.
Kayden	Planting Plants	Going outside and being able to paint, because it was fun while we got things done for our school.	I learned how to plant	To not emit gas into the world
Lylah	I don't know	painting rocks because it was fun.	how to plant plants	I don't know
Lyndsie	How to conserve and grow flowers	Planting the flowers and releasing the butterflies	how to work efficiently by myself	ride my bike to reduce emissions
Mario	how to plant a tree	planting plants	how plant	planting
Zoey	I learned that planting plants and such as makes the environment better.	My favorite activity from this semester was planting because it was fun!	A skill that I learned was painting.	Picking up trash, not using plastic bottles, and recycling.

Fig. 6. Qualitative responses to post-project survey questions.

Finally, we had students answer open-ended questions in the post-project survey for qualitative analysis. Similarly to their responses in the weekly surveys to what they had learned or enjoyed, a majority of students expressed that they enjoyed gardening and painting the most. Kayden wrote his favorite activity was “going outside and being able to paint, because it was fun while we got things done for our school.” In the beginning of our work together, most of the students related caring for the environment with wanting to pick up trash in their community. We discussed the impacts climate change can have on the environment throughout the semester, not just on humans but on pollinators and native plants. By the end of the semester, several students had incorporated a deeper understanding of climate change, and expressed desires to reduce carbon emissions, either through riding bikes, planting more plants, or using less plastic.

In the end, our results show that the students had a high level of fun and understanding of the material in this project. They showed a notable increase in agreement with statements that they enjoy and have the power to protect the environment. They expressed pride throughout our time together in what they were able to accomplish, and showed signs that they would like to continue similar work in the future.

## Reflection

### Group Reflection

As a group we feel a major strength of our capstone project was connecting to our students and witnessing their connections to our project and with each other. We worked well together as a group, which enabled us to adapt to unexpected changes or setbacks in our plans while maintaining a focus on our end goals. We were able to accomplish the core of what we set out to achieve, both building a pollinator garden and empowering students to act to address climate change. In the beginning of our work together, most of the students related caring for the environment with wanting to pick up trash in their community. By the end of the semester, several students had incorporated a deeper understanding of climate change, and expressed desires to reduce carbon emissions, either through riding bikes, planting more plants, or using less plastic.

A limitation we felt we experienced was sufficient time to carry out projects. We had hoped to refurbish a pollinator garden sign a previous capstone class had created in 2019, but ran out of time to add all that we had hoped to. In addition, although CSUMB students were able to build a garden



pathway in the outdoor classroom, we were not able to accomplish it during our time with the LAMS students, who we would have liked to include in that part of the project. If we had more time, we would have liked to engage in additional relational development and bonding activities within our groups. Although we had classwide bonding activities at the start of the project, we didn't have specific bonding activities once we split into project groups. The middle school students were naturally shy to express themselves and things they are excited about, which also made it difficult to individualize their education. If we could have done things differently, perhaps re-prioritizing what we hoped to accomplish and incorporating bonding activities and games into our curriculum would help us overcome the time constraints we faced.

We also have several suggestions for future project work based on things we would have changed looking back. A frequent comment among the LAMS students, within our group and beyond it, was that they would like to be allowed greater access to the outdoor classroom. Our students, as well as many others both this semester and in previous years, have poured a lot of energy and care into this space, but are unable to enter it a majority of the time. However, we were unable to plant outside of this space due to watering constraints. Future projects could look into establishing a student-led volunteer watering system to support the use of the many planter boxes around the school. In addition, a majority of the surveys we distributed were qualitative. Responses to survey questions showed if students did or didn't agree with statements, but not why. A possible area for future research would include a deeper look into not only if student perspectives have changed over the course of the semester, but why this may be the case.

### *Individual Reflections*

As I reflect on my collaboration with fellow CSUMB Pollination group students and our LAMS Pollination group students over the course of the semester, I am immensely proud of the work we accomplished. Our team consisted of exceptional students who worked incredibly well together, enabling us to achieve a great deal in a short amount of time. One of the key factors that contributed to our success was our flexibility, great communication skills, and ability to adapt to changes that arose. Our approach to engaging students was also a major contributor to the success of our project. By utilizing a variety of teaching methods that incorporated cognitive engagement, emotional connections, and hands-on activities (head, heart, hands) we were able to provide students with a comprehensive understanding of pollinators, the plants that sustain them, the importance of caring for them, and why that matters at all.

Through our activities, students not only learned about the butterfly life cycle but witnessed it themselves and participated in a butterfly release to the pollination plants they themselves had planted. Students also participated in art activities, physical planning, planting, and caring for plants in the outdoor classroom. Furthermore, our students were able to connect the work we did together to the broader picture of community and climate change, as evidenced by their reflective responses and thank you cards.

Through this project, I learned several important lessons. Firstly, providing students with guidance and direction is a powerful motivator for action and task completion. Secondly, given the freedom to accomplish tasks or not, students chose to engage and accomplish their tasks. Thirdly, allowing students to utilize their head, heart, and hands is a more comprehensive way to achieve desired learning outcomes. In particular, middle school students, who may initially appear apathetic, are often more engaged and enjoy doing the physical work. Additionally, I reinforced what I already knew, that I am a natural leader who is comfortable in that role, but I am also able to step back when necessary. I value constructive feedback, others' ideas and opinions, clear communication, and follow through. I find great satisfaction in collaborating with others to achieve common goals.

Overall, this project was an incredibly enriching experience for me, and I am grateful for the opportunity to have worked with such a fantastic group of students, both at CSUMB and LAMS.

- Amber Phillips

After finishing our final activity with the LAMS students, there was a moment of reflection where I felt we had done everything possible to connect these children with their surrounding environment. The emotions were surreal. We began the semester as complete strangers to the LAMS students, but we all had a common goal of wanting to learn a bit more about doing our part in contributing to the conservation of the natural environment. As a group, we came together to create a beautiful garden that assists in the battle against habitat loss for California's pollinators. These students learned valuable information about native plants and restorative techniques. Group work can be difficult, however I felt personally that our group encouraged each other to do something they normally wouldn't do. The CSUMB students and the LAMS students were able to share knowledge and personal stories to one another, engaging the group with a strong sense of community. Our project has the foundation to be a strong catalyst for rebuilding human and ecological connections for all generations.

Through my time at Los Arboles Middle School, I feel as though I gained more tools to enhance the connection between people and the natural environment. I have not had any experience working with grade school students in general, and to add a whole new dimension, was challenging. It wasn't until I reconstructed my perspective on my "failures" early in the semester that I realized I had not failed at all. The students seemed to have had no interest in what I had to say, but that is because climate change is a heavy topic. Building small connections creates the bonds that lead to the utmost results. By simply getting their hands dirty, whether it was through planting plants throughout the garden, watering, painting, etc., these young students were able to be engaged in the enhancement of their natural environment and community. This could have been motivated by the CSUMB students, but a lot of it was through the LAMS students' own curiosity. For example, I taught one of our students how to properly use a hose when we were watering together. This was a simple task I took for granted, and this student had the most amazing experience with it. We were able to facilitate learning while giving them tools to use in their everyday lives.

As human empathy builds through these small connections we make with nature, the will to conserve, preserve, and protect it becomes unbearable. We may not have gotten through to every student about the need for environmentalism, but at least we made a small contribution to their empathy. I've reinforced my connection with the natural environment when I was younger than these LAMS students, however they taught me more about my role on this Earth than I have ever been exposed to prior. I was honored to be a part of this amazing project, and I will utilize this momentum going forward throughout my journey in environmental education.

- Hunter Isbell

Looking back on what we've accomplished with this project, I find myself thinking about how both us CSUMB students and the LAMS students have grown over the course of this experience. I think everyone involved was pretty anxious at the beginning, especially the middle schoolers. Us college students had varying preconceptions about what it would be like to work with a bunch of kids, both positive and negative. It was great to see everyone get more comfortable with each other's involvement as the course progressed, especially once we got sorted into our project groups, since that's when I think everyone started to loosen up quite a bit.

Keeping the LAMS students engaged was a constant worry, but this became much less of an



issue as we as a group got better at planning our activities and as we found out more about the kids in our group. For instance, I found that asking the students what their prior experience—if any—they had during our planting day got them to open up a little bit about their homelife and their interests. For example, one of the students in our group grew up in a small apartment with her parents and siblings, and said that she enjoyed being outside and planting flowers. I was even able to talk about Lorna Shore—a deathcore band—with one of our kids, which was a pleasant surprise.

I felt most in my element during the days we planted stuff. My parents had me help them out a lot whenever they did any gardening or yard work when I was growing up, and I came to view it as a sort of meditative thing as I got older. So when I got to supervise those kids and show them how to properly plant flowers and trees, I felt pretty good. Like, in a way that I can't quite describe in words. It was even better when I learned that it was the first time doing yard work for some of those kids. I felt like a mentor at that moment, and I feel like I and my fellow Otters did a good thing for those Falcons.

- Phil Cipollone

During our time at Los Arboles, we accomplished more than I had expected we could at the beginning of the semester. Not only did we build a pollinator garden and teach students about native plants, pollinators and climate change, but we also helped empower them to make positive changes in their communities, and seek to continue making changes. A lot of the LAMS students appeared to be fairly apathetic towards their school and the project as a whole in the beginning. Most had never gardened before and were hesitant at first about participating. However, they jumped at the chance to engage in work that was different from their usual curriculum. We worked to incorporate the head, heart and hands in our activities, which provided the students with opportunities to get moving, embody change, and use their creativity in ways they normally wouldn't in school.

I've had the opportunity to work with grade school students before, both at work and in previous classes. This project helped me to practice skills such as engaging younger audiences, educational program/sustainable community development, and relationship building. This was an invaluable experience for us in learning to develop sustainability education which actually empowers people to create change. This project really drove home the importance of flexibility. We took our cues from the students, incorporating more of what they seemed most engaged in. We often had multiple contingency plans in case we needed to change things last-minute - a frequent occurrence, particularly in a rainy spring on the California coast!

I learned that one of the most important steps in building community relations is patience. I found that students care if you give them a reason to: showing that we cared about them and this project helped them to open up and led to a more balanced partnership. It took most of that time for the students to begin to open up to us, which drives home the lesson that the creation of sustainable communities is a slow-moving process which requires patience and commitment to building trust.

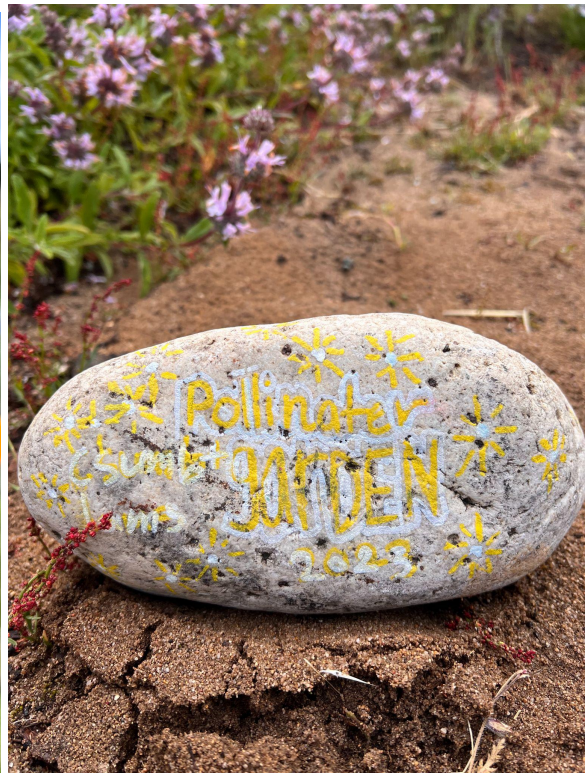
On a more personal level, I learned that I thrive working in the background, planning and keeping everything organized so things run smoothly, but I can step up as a leader when needed. Each of my CSUMB group members took ownership of a certain aspect of the project, giving us each the opportunity to take the lead in different areas. Facilitating the arts-based aspects of the project gave me the opportunity to combine what I love, art and science, to engage the LAMS students in new ways and try to spark new ways of thinking about how we can learn. Finally, this project reminded me that it's okay to ask for help: there were times when I was unsure of myself, particularly when taking on leadership roles, but I was able to rely on my group members to help when needed. We had a great group which worked well together, and I believe that is reflected in our work. Our teamwork helped create a positive environment which added to team building for our wider group and fostered the LAMS students' engagement, resulting in a project we could all feel proud of.

Reflecting on the time we spent at Los Arboles Middle School, I am reminded about just how much we were able to get accomplished as well as making an impact on the students. We were able to change up their everyday school routine and give them a less traditional way of how they learn everyday. After just a few times of being as LAMS I would get comments of how they looked forward to the days they got to spend with us CSUMB students. Altogether we had a very positive and collaborative group for the pollinator garden both with the CSUMB students as well as with the LAMS students. Although the middle schoolers started off hesitant to participate and really get into the work we were doing, once we started in our small group projects they really began to come together and collaborate with their peers.

There was a lot for me to learn from these students. Coming into the project I expected to have to give them lots of instruction and have to constantly keep them focused. But through working with them, and once they started on our project, it was clear that they liked doing it and needed little instruction on what to do and they even stayed focused most of the time. The middle schoolers really became their individual selves and were able to show us that they were capable of responsibility and environmental stewardship. Many, if not all of the students actually showed a passion for the environmental work we were doing. Most of my experience working with children is with elementary schoolers, this group of middle schoolers taught me more how to guide their own learning while letting them explore what they are passionate and excited about in a more hands off fashion.

Knowing that the students had an interest in animals, we were able to use that to get them initially interested in environmental literacy and sustainability. Having an interest in the animals made them want to know how to help those animals by learning how to sustain their habitat and environment. My thoughts about working with middle schoolers changed in many ways after working with this group of students. Before starting this project I felt that it would be very difficult to keep them on track and get them interested in wanting to do the activities we had planned for them. As we got to know them more I found that not to be true. They wanted to participate and I found that I liked facilitating them in the activities. The students surprised me and took their own leadership roles in being environmental stewards and engaged in conversations about their local environment as well as globally. I feel my perspectives have changed about working with middle school students after this experience. I loved being able to plant the pollinator garden as well as paint and watch the LAMS students observing the painted lady butterflies grow! But I loved it even more being able to share my passion and experience with the next generation and get them excited about helping the environment.





## References

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