

SIERRA NEVADA JOURNEYS CLASSROOMS UNLEASHED COMMUNITY NEEDS ASSESSMENT

Moving Toward a More Culturally Relevant, Equitable Framework for an Elementary Outdoor Science Program

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Sierra Nevada
JOURNEYS

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THANK YOU!

Thank you for your support of the Community Needs Assessment, curriculum development and delivery of Classrooms Unleashed to students.



MEETING TODAY'S CHALLENGES

Sierra Nevada Journeys recognizes that our local community has shifted as a direct result of both the COVID-19 pandemic and an equity focus to support Black, Indigenous and People of Color in the context of the Black Lives Matter movement. COVID-19 has exacerbated inequities in access to quality education and social emotional learning, particularly our youth and communities previously experiencing an opportunity gap due to systemic racism and inequity. With this in mind, we are modifying our STEM programs by bringing in community stakeholders to amplify the experiences and perspectives of Black, Indigenous and People of Color (BIPOC) and their families who live in our communities. We'd like to thank our supporters for financially underwriting this effort to initiate our organization's Community Needs Assessment: Renown Health, the Northwestern Nevada STEM Network, and SMUD Sustainable Communities Program.

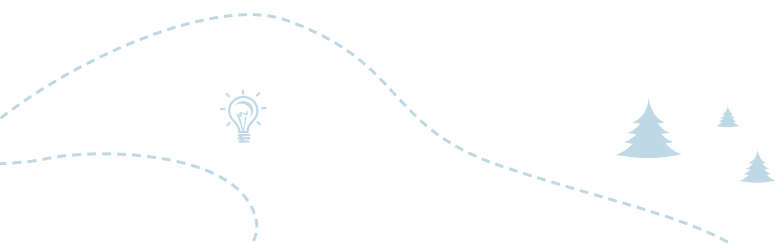
Classrooms Unleashed

Classrooms Unleashed uses hands-on, experiential and outdoor education as a framework for young people to study, think, and learn. The program was designed to address the Next Generation Science Standards and the North American Association for Environmental Education's Guidelines for Excellence. Sierra Nevada Journeys' team of experienced educators go into Kindergarten-through-sixth grade classrooms to deliver grade-specific, student-centered, inquiry-based science lessons in a multi-day program that culminates with an outdoor science excursion to a local field site. While it has proven to be a popular program, it was conceived and has been revised "in-house," with minimal community input.

Methodology

To determine the most salient questions for surveys and listening sessions, we began by conducting empathy interviews with two groups of end users: students and teachers. We interviewed three students in fourth-through-sixth grade and four teachers. From their responses, we developed a series of questions for each of these populations.

For the students, we inserted survey questions into the virtual Classrooms Unleashed webinars and recorded student responses given in the chat, and inserted questions into the post-program survey. For teachers and community-based organizations, we conducted 60-minute listening sessions with one-to-four participants at a time, recording their responses. For all three groups, we then analyzed the transcripts and survey responses to determine themes and patterns.



FOCUS POPULATIONS

The focus is for the program to be redesigned for the needs of communities that have been historically and systemically excluded from high-quality STEM education and outdoor experiences, namely Black, Latinx, and Indigenous students, English Language Learners and students with special needs in northern Nevada and northern California.

Stakeholders

Teachers: We selected teachers from communities that we work with in Sacramento and Reno who teach in schools with high populations of students in the identified focus population.

Students: To select the students for interviews, we reached out to teachers who teach in schools with majority BIPOC students, and asked them to reach out to the families of one to two students to gain permission for conducting the interviews. For the surveys, the majority of students we surveyed attend schools with high percentages of students receiving free and reduced lunch, and with racial and ethnic demographics of majority BIPOC students.

Community Based Organizations: We reached out to community-based organizations in the Sacramento and Reno area who work primarily with communities in the focus populations, as well as outdoor education organizations outside of these geographic areas that were selected for the centrality of cultural relevancy and equity to their missions and organizational focus (Vida Verde, YES Nature to Neighborhoods, and Camp Phoenix).



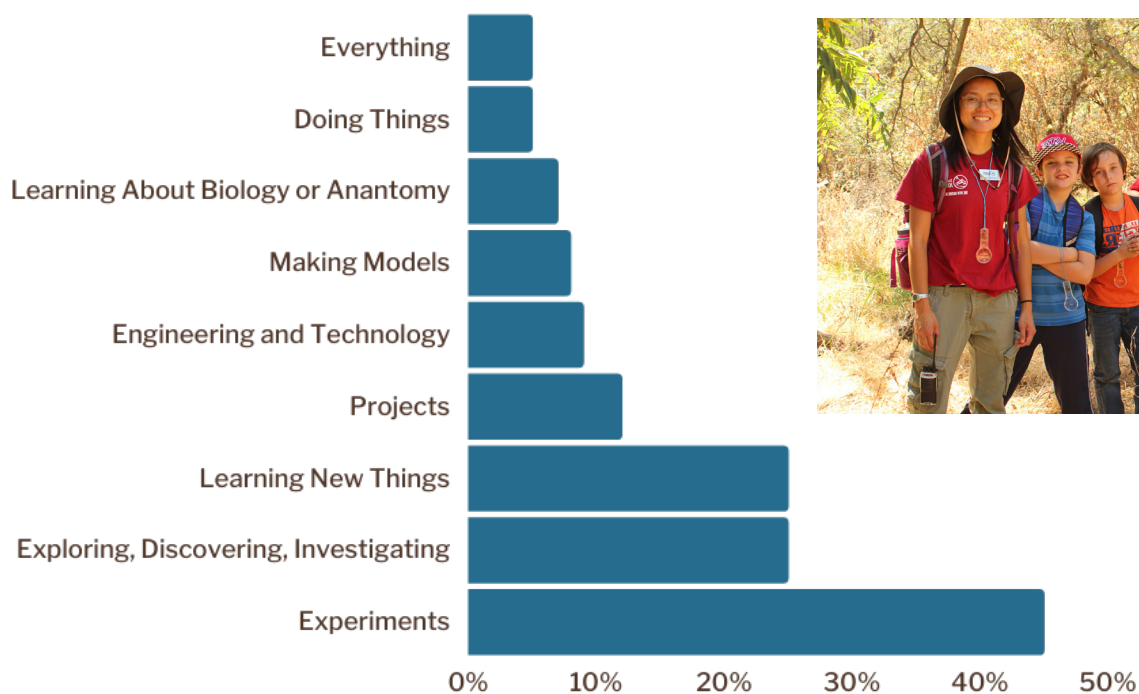
KEY THEMES

Students

Students love science because it is largely hands-on and involves “doing” instead of passively absorbing information.

When asked what they like about science, nearly all responding students described active tasks: experiments, projects, making, exploring, investigating.

Chart 1. Student survey responses to question, “What do you like the most about science?”



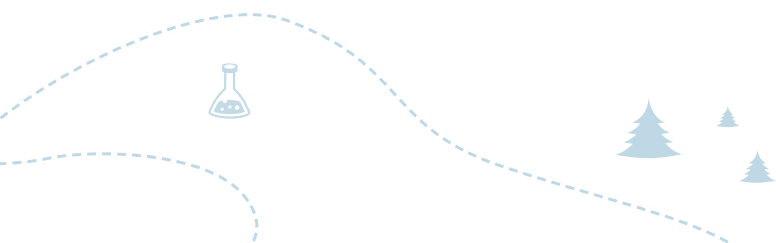
82%

82% of students say that their favorite field trip is science or nature related



Students enjoy field trips for the opportunities to spend time outside of school and in the outdoors, and do three-dimensional, hands-on activities.

Additionally, 82% of students who responded to our survey question said that their favorite field trip was science or nature related.



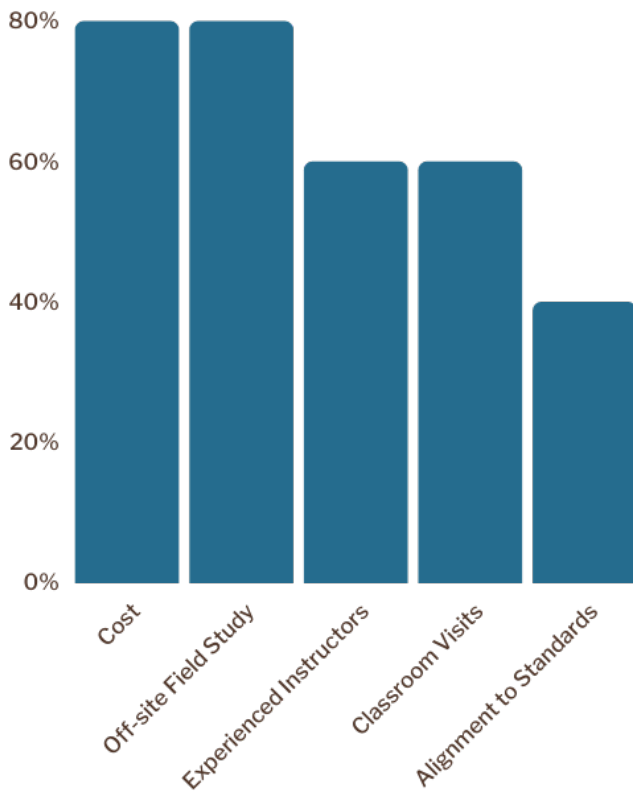
KEY THEMES

Teachers

Cost and value are major factors in deciding to contract with a third-party provider like Sierra Nevada Journeys.

Chart 2. Most important factors when choosing externally facilitated field trips or class visit programs

Percentage of teachers indicating this as important factor when considering an external program

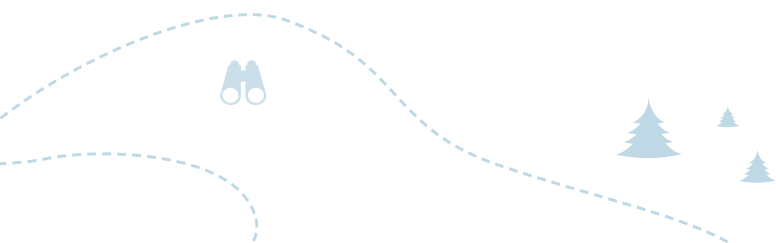


Teachers have little to no support for teaching science. Curriculum is outdated, budgets and supplies are non-existent. They are on their own to find the time and resources to teach science. This problem is worse at low-income schools than higher income schools.



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“There is no science budget, even when I was on a district committee a few years ago to start teaching science in classrooms...it had to be a zero dollar initiative ... science supplies ... haven't been replenished since 2001 or 2005 ...”



KEY THEMES

Teachers (cont.)

English Language Learners and Black students are those most likely to be left behind. However, science is a subject that engages these students the most, and where they are most likely to succeed.

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“[It’s] the most engaging thing I can teach to kids, that hasn’t changed in 20 years of teaching...it’s always worth it, always fun.”

“I can think of one kid who ... never participated, never turned in anything, not a scrap of writing. When we started going outside for science, that kid would run to the front to get into the garden first. That was the one time he would do a lot of writing all year ... Any time he got to get outside or get his hands on something, he was all in.”

Outdoor activities and off-campus experiences are incredibly valuable to students. The opportunity for experiential, hands-on learning and new or novel experiences in the outdoors is captivating and engaging.



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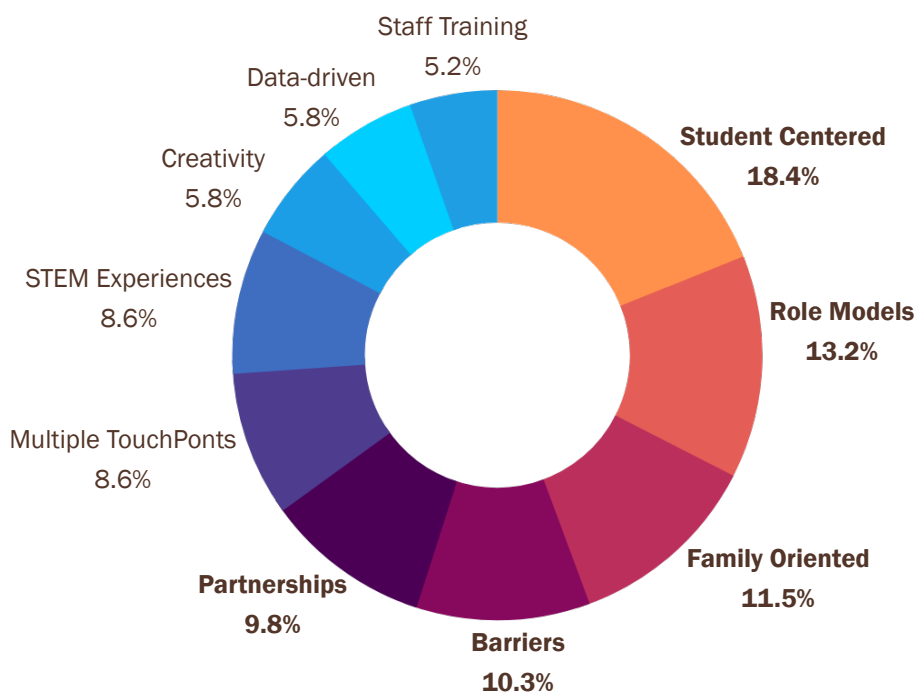
“... it was the first time the kids had seen deer in real life so it was such an amazing time, even though it was freezing and raining that day.”



KEY THEMES

Community Partners

Shown in the table below, five themes emerged as significant among community partners with nearly 10% or more of answers shared among interviewees. These themes are listed below in order of their priority (18.4% being the most shared response and top priority and 9.8% being the fifth priority.



Themes in the Community Partner Interview Responses

Themes	Total %
Not a one size fits all curriculum, relevance to home lives, and lived experiences are key themes. Ask questions of the kids and community participants, and active listening are also noted. Ensuring that our programs are student centered is important.	18.4%
Students need to see role models who look like themselves in these fields.	13.2%
Students from these communities are family-oriented and community-minded.	11.5%
Barriers exist, including: transportation, location, financial resources, equipment, discomfort with the outdoors, and fear of the unknown.	10.3%
Community partnership and collaboration can open doors to family access and trust.	9.8%
Have multiple touch points over time. Intentionally building relationships with students and families is key to having a lasting impact.	8.6%
Students need exposure to STEM and outdoor experiences .	8.6%
Assets of our programs include creativity , resourcefulness and resilience.	5.8%
Data-driven planning, implementation and evaluation are key components of the program.	5.8%
Staff training is critical to holding our organization accountable and doing this well. This training should be an ongoing conversation. Topics may include white privilege; power and privilege; trauma-informed practices; and teaching English Language Learners. Trainings also should include trauma-informed responses to students, DEI, and be continual as well as always growing.	5.2%

Community Partners (cont.)

Make sure your curriculum is relevant to students' home lives and lived experience. Ask questions of the kids and community and practice active listening. Ensure that your programs are student centered.

Students need to see role models who look like themselves in the STEM and outdoor fields.

“

“Until you see someone who shares similar background or until someone shares the opportunity, it is difficult for students and adults to imagine themselves in STEM and outdoor spaces. This includes a lack of diversity among staff.”

Students from these communities are family-oriented and community-minded.

Barriers to participation in STEM and outdoor experiences exist including: transportation, location, financial resources, equipment, discomfort with the outdoors, and fear of the unknown.

“

“Prepare them for what to expect before they even get off the bus. Understand that some groups of kids you have to do a lot of work to set them up before you ask them to sit down on the grass.”



“

“[Community-based] orgs probably have better trust with those that you are trying to reach out to. [Getting] as many quality partnership as you can is important.”



A lack of exposure to STEM and outdoor opportunities is a major barrier in the participation of marginalized communities in STEM and outdoor activities.

Representation and relevancy is important to students from the focus communities. Students need to see themselves in the leaders and scientists they are exposed to, and need their lived experiences recognized and validated.

Building trust with students and families from the focus communities is imperative. This includes involving families in meaningful ways, maintaining contact by providing multiple experiences over time, connecting with students and families through their trusted spaces. Community partnership and collaboration can open doors to family access and trust.

“

“Lack of trust is huge, if there is not an investment in relationships, it is hard to offer programs.”



NEXT STEPS

In addition to sharing what we've learned with our project participants, peer organizations, and partner community, we plan to incorporate these learnings into the Classrooms Unleashed redesign for Fall 2021. The redesign is still underway, but some key changes will include:

- Incorporate additional teaching strategies to support language acquisition, like visual aids, and kinesthetic movement to accompany vocabulary introduction.
- Incorporate engaging and relevant science phenomena and events to anchor the curriculum.
- Build in opportunities for students to connect to lived experiences and prior knowledge.
- Provide classroom teacher-led lessons based on our research-based teaching model to increase teacher access and confidence in teaching science.
- Include traditional ecological knowledge and learning experiences about local tribal communities.
- Increase representation of scientists and educators of color in our curriculum and in our staff.
- Train education staff on topics such as trauma-informed practices, mitigating implicit bias, strategies for teaching English Language Learners, supporting students with special needs, and more.
- Keep the field trip component of the program even as we decrease the overall number of in-person interactions from four to three.
- Continue to actively seek input from stakeholders, particularly students and families, as we move into the future.

Conclusion

The community needs assessment highlighted both the strengths and illuminated the gaps in the existing Classrooms Unleashed program. While it shed light on areas for growth in the content and delivery of the STEM lessons and learning experiences, what was more striking was what was learned about who our end users are and how we can engage with them in ways that truly address their needs related to science education, outdoor experiences, and critical thinking. Sierra Nevada Journeys has already begun implementing some of the key learnings from this project. We feel strongly that they provide the road map to the strongest and most effective outdoor science program.



Appendices

Appendix A:

List of Teacher Participants by School and Grade Level and City

Lena Juniper Elementary School, Special Education, Reno
Alice Maxwell Elementary School, 4th grade, Reno
Lemelson Elementary School, 4th grade, Reno
Lincoln Park Elementary School, 4th grade, Reno
Nancy Gomes Elementary School, 4th grade, Reno
Starr King K-8, 6th grade, Sacramento
Greer Elementary, 2nd grade, Sacramento
Pacific Elementary, 4th grade, Sacramento
Florin Elementary, 6th grade, Sacramento



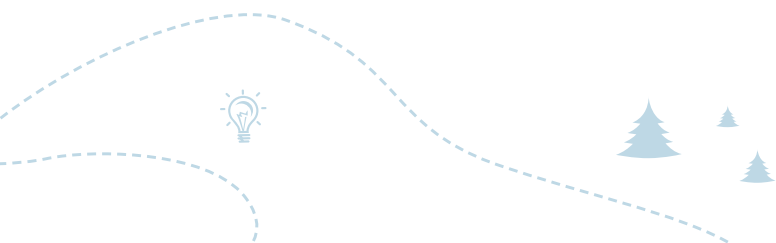
Appendix B:

List of Students by Grade Level and School and City

6th grade, Star King K-8, Sacramento
4th grade, Herman Leimbach Elementary, Sacramento
5th grade, Anna Kirchgater Elementary, Sacramento

Student Surveys:

Starr King K-8, Sacramento
Charles Peck Elementary, Sacramento
Arthur Butler Elementary, Sacramento
Greenbrae Elementary, Reno
Grand Oaks Elementary, Sacramento
Sequoia Elementary, Sacramento
Hidden Valley Elementary, Reno
Maxwell Elementary, Reno
Donner Springs Elementary, Reno
Maeola Beitzel Elementary, Sacramento
Risley Elementary, Reno
Stead Elementary, Reno



Appendix C:

List of Community Partners-Agency Name, Mission and Groups Served

Sacramento

Girl Scouts Heart of Central California is a place for every girl, and it always will be. For more than 100 years, Girl Scouts has given girls the tools to lead, break barriers, and create positive change. These are the girls and young women who dream big and do even more. Girl Scouts' unique program, backed by decades of research, provides a place where girls can explore, discover, and just be themselves.

Improve Your Tomorrow's (IYT) mission is to increase the number of young men of color to attend and graduate from colleges and universities. It was created in 2013 to break the school to prison pipeline by helping young men of color get to and through college. IYT currently serves over 1000 young men of color through three academic programs including the IYT College Academy, IYT Continue to Dream Academy and IYT U.

PRO Youth and Families' mission is to inspire, educate, and mobilize young people to build a healthier future for themselves, their families, and their communities. The organization confronts the trauma youth, families, and communities face by inspiring, educating and mobilizing youth. They are a strengths-based youth development agency that inspires young people in under-resourced communities to speak out and stand up for the issues that matter to them.

Sacramento City School District Youth Development Support Services uses the Social Justice Youth Development Framework to inform the development and implementation of high-quality programming for our students. This Framework provides our staff and partners with intentional guidance in the development of programs and supports that build the capacity of our participants.

Sacramento Native American Health Center is a nonprofit Federally Qualified Health Center, located in Midtown Sacramento. The health center is committed to enhancing quality of life by providing a culturally competent, holistic, and patient-centered continuum of care. There are no tribal or ethnic requirements to receive care here.

Sol Collective's mission is to provide artistic, cultural, and educational programming, promote social justice, and empower youth through art, activism, music and media experience. The Sol Collective Arts and Cultural Center is a 3,200 square foot space providing art exhibitions, community workshops, youth programming, and a platform for public organizing.

Square Root Academy is a S.T.E.A.M. (Science, Technology, Engineering, Arts, and Mathematics) based non-profit organization dedicated to educating underrepresented youth on the fundamentals of S.T.E.A.M. while emphasizing collaborative learning, innovation, and academic excellence. This goal is executed under its key pillars: Community involvement, project based learning, and professional S.T.E.A.M. exposure. Square Root exposes its scholars to the growing field of S.T.E.A.M. at no cost, while promoting creativity, leadership, and academic excellence.



Reno

Northern Nevada Black Cultural Awareness Society (NNBCAS) approaches ethnic cultural awareness globally, attempting to educate the whole community. Our programs and activities celebrate cultural holidays, educational opportunities for youth, and expose the community to quality arts, including music, literature, theater, history, and dance.

Renown Health is a locally-governed, charitable, not-for-profit organization that recognizes that engagement and input from our community is a vital component in creating outstanding relationships and delivering excellent health and healthcare focusing on quality, experience and value.

Washoe County School District Family Engagement Team-School Partnerships works to build partnerships between families and schools so that every child will graduate from high school; college and highly skilled career ready.

Equity-Focused Outdoor and Environmental Education Organizations

Camp Phoenix is a fun-filled, justice-centered program that is intentional about empowering teens from low-income backgrounds and reconnecting them to nature so they can become the leaders our community — and our planet — needs. Founded in 2012, Camp Phoenix serves about 90 campers each summer and strives to bring joy, love and opportunity to everyone who joins the flock.

NatureBridge connects young people to the wonder and science of the natural world, igniting self-discovery and inspiring stewardship of our planet. Through our overnight, hands-on environmental science programs, we take more than 35,000 children and teens each year into our national parks to explore the outdoors, connect with their peers, discover themselves and develop a lasting relationship with the environment.

Vida Verde promotes educational equity by providing free, overnight environmental learning experiences for students who don't otherwise get the opportunity.

YES Nature to Neighborhoods works in partnership with nature. YES nurtures leaders who champion the wellbeing of our community. Its vision is for Richmond youth, adults and families to lead healthy, connected lives; motivate change in their neighborhoods; and inspire a safe, thriving community.

