Engage and Empower - Citizen Science and Authentic Audiences

Who we are:
We are current science teachers with a combined 25 years of experience in education and industry. Through our experience, we understand the importance of connecting classroom education to a greater community. We have taught biology, biotechnology, genetics, ecology, environmental science, and chemistry. We recently presented together at the Annual CUE conference. One member of our team has presented at a Google Summit, Teach Through Technology, multiple Fall and Annual CUE conferences, was part of a Rockstar faculty last summer, and completed the MERIT program.

What is Citizen Science: (We can use one of the AP biology student videos as our introduction to Citizen Science)

Do you want to engage your learners in real world science? Do you want your students to present their work to an authentic audience? Are you ready to inspire young scientists to make a difference today and not just wait for their future? Come explore Citizen Science. Provide opportunities for any individual to contribute their time, effort, research, or ideas to a greater community. We use Citizen Science as a means to enrich our current curricula and allow students to see their learning transcend the classroom. Through their Citizen Science experiences, students can see how their ideas, innovations, and research can help contribute to solving real world issues, restoration efforts, problem solving, maintaining biodiversity, and so much more.

Do you want to engage your learners in real world science? Help your students become Citizen Scientist by sharing their ideas, research, and learning with their local and global community. Participants will leave with new tools and resources to get their students started.

Presentation Outline:
The goal of this presentation is to help educators become aware of the impacts of Citizen Science on their students. Presenters will share how Citizen Science is currently being implemented in their classrooms, what struggles they have encountered in the process and how introducing Citizen Science has increased student engagement and success. Educators will brainstorm ideas and help others find ways to incorporate Citizen Science programs into their own curricula. Participants will have the opportunity to see programs that have been used in our classrooms, and how programs can be connected to current science standards.

1. **Introduction:**
- Introduce ourselves and the idea of Citizen Science
- Share what Citizen Science is and how it can be used in the classroom to enrich the learning process
- Explain how Citizen Science allows students to present their learning to a broader community.

2. Benefits of Citizen Science:

- Student engagement
- Application of 4Cs (communication, collaboration, critical thinking and creativity)
- Authentic science experience
- Connections outside of the classroom
- Local and global community involvement and feedback

3. Sharing specific Citizen Science projects: (this list may change as new projects become available)

- Save the Bay
- Limpets
- KQED
- Open IDEO
- iNaturalist
- Academy of Science
- NASA
- Breakthrough Junior Challenge
- Zombee
- The Longest Swim
- SciStarter - find a project!

4. Guide audience through the process of Citizen Science:

- Discuss ideas for curricula
- Discuss time needed, classroom management, and applications of Citizen Science
- Provide tools and resources that have been used in the classroom that will allow educators to implement ideas in their own classrooms

5. Connect the Citizen Science projects to curriculum for NGSS:

- Connect a few of the above projects to specific standards in a science classroom