



Light on Literacy

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Physics

9th Grade

High Tech High Chula Vista

Students created custom solar charging reading lanterns for a little buddy, kinder and 1st grade, at the Monarch school in downtown San Diego. The Monarch school has specific supports for the home insecure and their children. My team of students, the “Co-Op”, meets several times throughout the project at their school. The emphasis is on Reading Literacy so the little buddies are read to on each visit, as well as, empathy interviews, submission of artwork the little buddy wishes, and refinement of final designs. Students learn about Circuit Electricity, 3D modeling for laser cutting custom designs, and soldering to create the solar charging circuit for the lantern. Co-Op students earn learning “Badges”, for example, Soldering, Ohm’s Law, Electric Circuits, 3D Modeling, Negative and Positive space, Mindfulness, and others. “Badges” are specific skills, knowledge, processes, and social emotional learning goals that are a “must” in providing evidence for a digital portfolio for Student Led Conferences, Presentations of Learning, and for sharing with education visitors from around the world. In addition, students learn about anxiety and depression, as well as, strategies for empowering healthy brain health. In researching solutions for home insecurity, students learn about the emotional stress on children and the importance of having a mindful mentor interact with them. The relationships forged are truly life changing.



Teacher Reflection

This is an incredibly motivating project and extremely engaging for the Co-Op students. I have learned over time that visiting several times is an incredible experience for developing relationships that are very meaningful for both the little buddy and the Co-Op students. In addition, over time, I have been able to add “challenge options”, such as, an integrated rechargeable sound module where students record themselves reading their favorite children’s book. Several were recorded in Spanish, the first language of many of the little buddies. The next change would be to reintroduce the option to design a Reading Lantern that can be 3D printed. Since Covid, I have emphasized laser cutting, for ease, however, the option to 3D print offers an endless customization of the form the lantern can be made. This is a fantastic project with many different ways to implement, for a first time project based learning educator, to a veteran.

—Ted Cuevas

Student Reflection

The Light on Literacy project originated as an idea where some 9th grade kids could build something out of learning circuit skills, sketching, designing and most importantly compassion. We were able to make a solar charging Reading Lantern for a child challenged with home insecurity. We took time to get to know them in order to personalize it and give the best that we could.

—Daniela T.



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