

Inspiring Innovation through Collaboration: STEM Event at Hoover Middle

June 2024



One hundred students from [Herbert Hoover Middle School](#) (Hoover) gathered in small groups at tables with old CDs and rubber bands. [English Language Development](#) (ELD) students in grades 6-8 along with Hoover Leadership students, teachers, and facilitators from a local nonprofit repurposed these materials, once destined for the trash, and turned them into a fun, STEM-focused learning activity. Students constructed platform cars with CD-wheels and tested them to learn about energy, gravity, simple machines, and more in an example of “found engineering.” This event was a collaboration between Hoover MS, San José nonprofit RAFT, and the [Mineta Transportation Institute](#) (MTI).

These collaborations between educational institutions, nonprofits, and schools are paramount in promoting student success, offering young learners experiences and access to resources and opportunities they may not otherwise have. This is beneficial for the students as they advance their educational and career paths as well as for their communities.

Of the approximately 1,000 total students at Hoover Middle School in San José, CA, nearly [80%](#) are Hispanic or Latino. Of the school’s ELD population—the majority of whom speak Spanish as their first language—11.38% meet the state’s standards of “proficient,” meaning many students at Hoover may face additional language or cultural challenges in their academic journeys. Fortunately, Hoover and the rest of the [San José Unified School District](#) recognize the boundless potential of their diverse student populations. Hoover ELD students engaged in this event with help from [Resource Area For Teaching](#) (RAFT), a nonprofit organization founded by a San José teacher in 1994, which provides educators with engaging hands-on learning resources that align to state standards.

Getting students excited about STEM is good for everyone. STEM (Science, Technology, Engineering, Math) activities help kids learn problem solving and critical thinking as well as many other skills that can help them in life and in their future careers.

Across the nation, transportation is facing a workforce shortage that is increasing as large numbers of workers retire. A 2023 [report](#) from the [American Public Transportation Association](#) noted that 96 percent of agencies are experiencing a workforce shortage, with 84 percent reporting the shortage affects their ability to provide service. Workforce development, especially programs that focus on historically under-represented populations—including people of color and women—are crucial to ensuring our nation's transportation systems are safe, effective, sustainable, and able to meet the needs of all communities today and into the future.

As well as meeting several [Next Generation Science Standards](#) and getting excited about transportation, students who participated in the event were able to practice social-emotional skills like self-awareness, self-management, and responsible decision-making. One student said, "It was one of the best 8th grade experiences this year. We got to participate in hands-on activities that we enjoyed and it was really cool to put together a car and test our accuracy." Other students similarly expressed that they found the project both challenging and fun.

A Hoover Middle School teacher involved in the project said, "I loved being able to give our English Language Development students a hands-on experience they have never experienced before. They were engaged the entire time and they truly enjoyed the activity. They were excited to take a car kit home. They are still talking about it!"

This event was just one of the many workforce development programs created and implemented by MTI, and we are excited to continue valuable partnerships with RAFT and Hoover Middle School in the near future!

MTI Executive Director, Karen Philbrick, PhD