The new Project Lead the Way, or PLTW, program at Reno High School is an exciting opportunity for students to explore career pathways in engineering through hands-on learning, group-based projects, and tackling real-world problems. The PLTW pathway is divided into three separate classes: Introduction to Engineering Design (Level 1), Principles of Engineering (Level 2), and Civil Engineering and Architecture (Level 3).

In Engineering Design, students learn how to “think like an engineer” by discovering key relationships between disparate subjects like math, science, art, and English. They tackle small projects in teams, learn fundamental technical drafting and communication skills to accurately share their designs, and are given the opportunity to bring their creations to life with a variety of materials and tools, such as scroll saws, drill presses, and 3D printers.

Students take the foundation they have developed in Engineering Design, and use it to explore deeper into various engineering disciplines such as mechanical engineering, civil engineering, computer programming, renewable technologies, and electrical engineering. Students design, program, and build their own robots and autonomous machines to perform tasks, build and evaluate bridge and truss designs, research and build scale renewable energy technologies, and design and construct basic circuits.

Lastly, students take a deep dive into the fields of Civil Engineering and Architecture, and learn the fundamental principles to safely, economically, and aesthetically design and build residential, commercial, and industrial structures. Student teams will design and build a scale model of an affordable housing subdivision, including potable water and sewer utilities, site-grading, storm water remediation, and foundations, all up to architectural and civil code. Students will also explore concrete mix design, soil analysis, and modern construction techniques, to design larger commercial and industrial structures for a given location.

Through all of these experiences, students will leave the program with a basic knowledge of numerous engineering disciplines, and focused application of the skills to civil and architectural problems that still lay a strong foundation in problem solving and communication that will benefit any pathway a student takes.