

BUILDING MORE THAN AN E-BIKE: STEM CAMPERS LEARN THROUGH HANDS-ON ENGINEERING

One of the highlights of the first week of **STEM** was watching our campers take on an exciting engineering challenge, building an E-Bike together.

At first glance, students may have seen a collection of parts, tools, and instructions. But as the project began, they quickly realized they were participating in something much bigger than simply assembling a bike. They were learning valuable STEM skills through a hands-on experience that required **teamwork, critical thinking, creativity, and perseverance**. Working together, campers learned how different components fit together and how electrical systems play a vital role in an E-Bike's operation.

They explored electrical connections, discussed how power moves through the system, and discovered the importance of following a process carefully. Along the way, they asked questions, tested ideas, and solved problems as they arose. One of the most encouraging aspects of the project was seeing students collaborate. Building an E-Bike is not a one-person task. It required **communication, cooperation, and a willingness** to help one another. Students learned that successful engineering often happens when people work together, share ideas, and support each other toward a common goal. The project also challenged campers to think critically. Not every piece fit perfectly on the first try, and not every step was easy. Students had to slow down, analyze the problem, and determine the best solution before moving forward. These moments often became the most valuable learning opportunities.



One student summed up the experience perfectly when he said, "It was challenging, but it was a good challenge."

That simple statement captures what STEM education is all about. Real learning often happens when students are pushed beyond their comfort zones and encouraged to tackle something new.

Through challenges, students develop confidence, resilience, and the belief that they can solve problems as they arise. As instructors, we found it rewarding to watch campers move from uncertainty to accomplishment. What seemed difficult at the beginning of the week gradually became achievable as they gained new knowledge and worked together as a team. Every completed step brought a sense of pride and excitement as they saw their project taking shape.

Projects like the E-Bike challenge help students understand that STEM is more than science, technology, engineering, and mathematics it is about learning to **think, collaborate, and persist** through challenges. These are skills that will benefit them far beyond the classroom.

Week 1 gave our campers a glimpse into the world of engineering, and they embraced the challenge with enthusiasm. We are proud of their hard work and look forward to seeing them continue to grow as **builders, problem-solvers, and innovators** throughout the rest of the summer. Sometimes the most valuable thing students build is not the project itself, but the confidence they gain from discovering that they can do hard things.

