

# **Robotics Camp Gives Youths Opportunity to Learn STEM Concepts at WNC**

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They don't have to drive 9 hours to Legoland to share the joy of what can be created with plastic construction toys.

LEGOs have been only part of the Robotics Camp at Western Nevada College this week as area youngsters have been touched by the wonders of science and physics.

The weeklong camp in the WNC's Reynolds Center for Technology has focused on robotics, but campers are being exposed to a variety of STEM concepts, said Scot Duncan, who is conducting the camp with Michelle Bowler and Aki Okazaki.

Presented by Cyber Mafia (the Carson High School robotics team) and the Sierra Nevada Junior Optimist International Club, the camp has two half-day sessions: kindergarten through fourth grades in the morning and fourth through eighth grades in the afternoon. For robotics and programming, the younger campers are using LEGO WeDo, while the older campers are making use of LEGO MINDSTORMS.

"Some of these concepts are difficult but introducing them now sparks an interest in key STEM concepts and lays a foundation for a greater understanding later," Duncan said. "A moment of discovery now can be the key to a lifetime of curiosity about science, technology, engineering and math."

Early in the week campers were mesmerized while members of the Carson High School robotics team demonstrated a robot they built that could pick up large blocks and then restack them neatly elsewhere. They also learned the importance of building a strong base for their robot and understanding why it only needed two wheels for motion and steering.

These concepts helped the campers build toward Friday when they planned to showcase their creations to their parents during a demonstration hour.

Duncan said that being able to hold the camp at WNC has been invaluable and inspirational to the children.

“My experience is that holding events at a high school or college engages elementary and middle school children at a heightened level,” Duncan said. “First-hand contact both stimulates and makes the possibilities more tangible, especially exposure to the labs and equipment. From this experience, they can better understand what higher education can do for their futures.”

Duncan said that mutual goal of Cyber Mafia and Sierra Nevada Junior Optimist International Club is to promote STEM in the community. WNC has provided a venue for camps, tournaments and seminars organized by Duncan, who coaches Cyber Mafia and serves as an adviser to the Sierra Nevada JOI Club, as well as coordinator for FIRST LEGO League and robotics program in Northern Nevada.

“We wouldn’t be able to host these events without WNC’s assistance,” he said. “Beyond simply providing a room, the administration and staff go above and beyond — from providing talks about the benefits of continued involvement in STEM-related fields to giving tours of WNC’s equipment and facilities.”

#### **CAPTIONS:**

**WNC Robotics Camp.jpg:** Nevan McIlwee and Luke Bowler of the Carson High School robotics team lead a robot demonstration during a Robotics Camp for kindergarten through eighth-grade students this week at Western Nevada College. The robot is programmed to pick up blocks and then restack them elsewhere.

**WNC Robotics Camp1.jpg:** Building a robot base during the Robotics Camp at Western Nevada College are (left to right) James Walther, Linda Bathgate and Thomas Bathgate.

**WNC Robotics Camp1.jpg:** Robotics Camp instructor Scot Duncan leads a lesson explaining why manufacturing tolerances create engineering challenges when trying to pick up two cubes with a single-gripping system as camper Don Winne listens.