Electronics 101

This course uses a project-based learning model to help students understand electrical and electronic theory and principles.

Students gain an understanding of the purpose and proper use of standard trade tools, and test and signal measurement equipment used in the construction and repair of electronic circuits and devices.

Safety procedures, team collaboration, and prototyping using a wide assortment of electrical and electronic components are included in the course for a more complete student learning experience.

Life Skills

The Life Skills course combines several disciplines to help students prepare for success in school, employment, and life. Course topics include:

- Introduction to business and financial literacy
- Communication and Presentation
- Creative thinking
- Community Citizenship
- Time Management
- And more.

How It Works

Curiosity. Exploration. Experimentaton. A Solid Foundation

The "How It Works" course helps youth develop analytical and logical thinking skills while learning about everyday devices and systems.

This STEM-focused course is designed to inspire our youth and help through encouragement, boost their self-confidence, curiosity, self-motivation, knowledge and competence. While the "How It Works" course emphasizes technology, our goal at AVCTC is to help develop character, personal acountability, and other important attributes of good community citizens.

Youth Program Student Outcomes

- *Knowledge of classroom and shop safety*
- *Improved creative and critical thinking*
- *Improved problem-solving and logical thinking*
- *Use of work environment collaboration practices*
- *Proficiency in the use of age-appropriate tools*

- *Improvement in presentation skills*
- *Self-motivation and personal accountability*
- *Interest in higher learning and certification*
- *Improvement in reading, writing, and math*
- *Higher performance and project completion*

Electronics 101 and How It Works

Project List

- Safety. Safety. Safety.
- "What Youth Should Know"
- Instruction in the proper use of shop tools
- Audio systems exploration
- Drone operation proficiency training
- Computer Systems - PC Build
- ASCII For Humans - Ones and zeros of data
- Number Systems (Dec-Hex-Bin)
- Intro to Stepper, DC, and Servo Motors
- Robot arm programming
- Parallax Bot
- Introduction to soldering
- Electronic kit building
- Infrared signaling
- Digital multimeter measurement
- RPM measurement
- Large LED display
- Flashing stop sign
- Introduction to coding
- Sound pitch and intensity measurement
- Messaging in Morse code
- Tuning Into radio signals
- Introduction to home sprinkler control
- Battery display board measurement
- Temperature measurement
- UPC (barcode) demonstration
- POS terminal and register drawer
- Word puzzles using industry vocabulary
- Electronic event counting methods
- Scrolling sign programming