



Automotive Module

Volunteer Instructions

YOUR ROLE TODAY:

You will be walking the students through a circuit board activity followed by wiring an automotive headlight, back-up light and a horn.

Prior to connecting their positive and ground wires to the battery pack for the automotive wiring section, you should assist any students that may need help, answer any questions, and check their wiring. **PLEASE do not allow the students to connect their own wires to the battery pack without you being present and checking the wiring circuit first.**

When the students arrive, have them stand at one of the five tables. You should have 5-6 students per table.

Introduce yourself and let them know a little about you. Where do you work, what do you do, how long have you been there, where did you go school, how did you get to where you are today, education background etc.

Let the students know that today they will be learning about the basics of wiring a circuit board and then transferring that wiring information by wiring different parts of a car.

ACTIVITY 1- CIRCUIT BOARD

Make sure each student has the clear circuit board box in front of them. Have them open their box and turn to page 1 in their instruction booklet. Explain the parts in their box: batteries case (power source), blue wires, switch, light, motor etc.

Inform the students that they will begin with wiring a motor. Following the directions on page 2, have the students begin to snap the pieces together to wire the motor to make it spin.

Once the students are done ask:

- How many were able to make their motor spin?
- What is the power source? (battery)
- What would have happened if you didn't wire the negative blue wire from the battery to the motor? (It wouldn't spin. To have power, all circuits need a positive and negative wire to the power source to complete the circuit)

Turn to page 3 and have the students follow the same procedure to connect the light bulb.

Activity #2- AUTOMOTIVE WIRING

Place a blue board on each table. Inform the student that they are now going to take what they just learned and relate that to a car. Let the students know that they will be wiring a headlight, back-up light and a horn. They should take turns (2 people can work on an item to wire at a time) so that everyone has a chance to wire an item on the board.

Let the students know a few simple directions before starting:

- ✓ Always connect RED- RED and BLACK-BLACK wires (never attach a positive to negative)
- ✓ When they are finished raise their hands and you will be around with the battery pack to check their wiring and to test if they connected the wires correctly.

Referring to the directions, review the automotive parts on the board.

First, they will start with the Headlight. Have the students work at their own pace and let you know when they are done. Encourage the students to work together.

After a group has completed the headlight, and you have checked it, they can move on to the backup light. Do the same as the headlight, check it when they are done and finally complete with the horn. Tell them to be patient until you can get around to everyone.

When everyone has completed wiring the parts on the board, refer to their directions how the automotive headlight, matches the circuit board they did in the first activity. For example, the negative wire from the battery to light and positive wires from the battery to switch and to light.

Wrap up comments to the students:

- Let them know the need for technicians.
 - You can even give a personal example in your own company the demand that is needed.
- What skills employers look for?
- Where they can gain experience through college (HACC, UTI, Penn College of Technology)
- Something to consider senior year, HACC offers a course you can take to gain credits before graduating from high school. You can receive a certification to do state inspections and emissions testing allowing you to work in the automotive field upon graduation. Talk to your guidance counselor for more information.

Thank you for your time to today! We greatly appreciate it!