

What's it all About?

By now you have completed at least four electric projects and are in the 7th -12th grade. Here in the advanced division you will get to explore and experience what most interests you. Projects become more exciting now as you are turned loose to pursue an area you choose, instead of a set required project. Create a project that will be useful and functional.

We are going to provide you with some possible ideas, but you are by no means limited to these. Now that you are older, there will be higher expectations. The electric project must be done safely to protect people and property. It is not like most other projects, and it will be judged more critically so do not be offended during judging. Learn to grow from the experience, and never be afraid to ask questions if you are unsure.

Use old manuals and previous experience as you develop your projects. Speak to a professional about your ideas. The internet can be a useful source of information, but always look at several sites to corroborate the information. When planning you may want to think two to three years into the future. Build on an idea from one year to the next. For example, you may do some sort of display one year and a written report of you installing the equipment in an actual structure in subsequent years. You could even do some wiring that will benefit you in a completely different project, such as installing light fixtures and outlets in a barn to help with an animal project.

Project Ideas and Suggestions

- Wiring receptacles
- Wiring single, three or four way switches
- Design/wire branch circuit – 120V or 240V
- Fuse Protection for circuits/motors
- Panel boards/disconnects/transfer switches
- Meterbase/service entrance
- Motors and starters
- Types of wires
- Types of conduit
- Types of enclosures
- Types of lighting
- Careers
- Electrical components
- Glossary of electrical terms
- Types of connectors
- Consumer buying
- Grounding and bonding
- National electric code – origins, history, current use
- Electronics/components/programming
- Electronic kits
- Lockout/tagout
- Education presentation

Useful Information to Include with the Finished Project

- Material specifications and cost
- References
- Wiring diagrams
- Safety features
- Research and planning
- Usefulness of project
- Wiring techniques/principles
- Neat display
- Effective title/labels
- Record sheet
- Pictures – before, during, after

Configuration of Finished Project

- Working display that is portable
- Display board – up to 36”x36”
- Poster board – 22”x28”
- Written report
- Electronic media

Final Safety Note

1. Wear safety glasses and any other protective gear (gloves, hardhat, etc.).
2. Ensure all electrical equipment is not energized. Use voltage meters. Lockout and tagout existing equipment.
3. With any wiring project, safety for people and property is most important. The grounding wire (green or bare) is what provides protection. It must be properly bonded/connected to all metallic components in the circuit.