

# ELECTRICITY

(Last updated 12/2020)

**State Fair Entries:** One entry per division

References: BU-6848 Level 1 (Grade 3) - Magic of Electricity (FREE project book at the Extension Office)

4-H 528 Level 1 – [Record Sheet – Electric 1](#)  
[Level 1 Circuit Board Template](#)  
[Level 1 Activity I](#)  
[Level 1 Activity II](#)  
[Level 1 Activity III](#)  
Exhibit Skills and Knowledge Sheet ([link coming soon](#))  
Exhibit Skills and Knowledge Chart ([link coming soon](#))

BU-6849 Level 2 (Grade 4) -  
Investigating Electricity (FREE project book at the Extension Office)

4-H-422a-W Level 2 – [Record Sheet – Electric 2](#)  
[Level 2 Activity I](#)  
[Level 2 Activity II](#)  
[Level 2 Activity III](#)  
[Level 2 Activity IV](#)  
[Level 2 Activity V](#)  
[Level 2 Activity VI](#)  
[Level 2 Activity VII](#)  
[Level 2 Activity VIII](#)

[Magnetic Powered Shakelight Presentation](#)

Exhibit Skills and Knowledge Sheet ([link coming soon](#))  
Exhibit Skills and Knowledge Chart ([link coming soon](#))



BU-6850 Level 3 (Grade 5) – Wired for Power (FREE project book at the Extension Office)

4-H 528 Level 3 – [Record Sheet – Electric III](#)  
Exhibit Skills and Knowledge Sheet ([link coming soon](#))  
Exhibit Skills and Knowledge Chart ([link coming soon](#))

BU-6851 Level 4 (Grade 6) – Entering Electronics (FREE project book at the Extension Office)

4-H 528 Level 4 – [Record Sheet – Electric IV](#)  
[Level 4 Activity I](#)  
[Level 4 Activity II](#)  
[Level 4 Activity III](#)  
[Level 4 Activity IV](#)  
[Level 4 Activity V](#)  
[Level 4 Activity VI](#)  
Exhibit Skills and Knowledge Sheet ([link coming soon](#))  
Exhibit Skills and Knowledge Chart ([link coming soon](#))

4-H 425a-W Level 5 (Grades 7-12) – Record Sheet (Coming Soon)  
Level 5 Advanced Project Ideas:  
[General Project Ideas and Suggestions](#)  
[3- and 4-Way Switch Combinations](#)  
[Basic Electrical Tool Set](#)  
[Electrical Conduits](#)  
[Dissect, Discover, Display](#)  
[Duplex Receptacles](#)  
[Generator Interlocking Circuit Breaker Kit](#)  
[Notebook About a Career in Electric](#)  
Exhibit Skills and Knowledge Sheet (link coming soon)  
Exhibit Skills and Knowledge Chart (link coming soon)

**Kits Sold at Extension Office - Circuit Board, Extension Cord, Trouble Light & Shake Light**

**Website:** <http://www.four-h.purdue.edu/electric/>

Reference: All posters, notebooks, and display boards must include a reference list indicating where information was obtained, giving credit to the original author, to complete the 4-H member's exhibit. This reference list should/might include web site links, people and professionals interviewed, books, magazines, etc. It is recommended this reference list be attached to the back of a poster or display board, be the last page of a notebook, or included as part of the display visible to the public. A judge is not to discredit an exhibit for the manner in which references are listed.

**LEVEL 1 (Grade 3) Last modified 9/2020**

**Project Completion Recommendations:**

Complete the activities as instructed in the manual and fill out the "[4-H Club General Record Sheet](#)" (4-H-528) or as specified by the County Extension Office. All posters, notebooks, displays, and exhibits should include a reference list indicating where information was obtained, giving credit to the original source. This reference list may include website links, people that helped you, books, magazines, etc. It is recommended that this reference list be attached to the back of a poster or display, be the last page of the notebook, or included as part of the display or exhibit visible to the public. A judge is not to discredit an exhibit for how references are presented.

**Exhibit** one article of choice displaying proper wiring techniques, made during the current 4-H program year. It must demonstrate a minimum of five (5) or more of the appropriate level of "Skills to be Attained" items as outlined in the "4-H Electric and Electronic Skills & Knowledge Chart". **A completed copy of the "Exhibit Skills & Knowledge Sheet" must accompany the project.**

**Exhibit Suggestions:**

- **Circuit board** – 6" by 6" of Series/Parallel Circuit
- **Electromagnet**
- **Galvanometer**
- **Poster board** (22" by 28")
- **Display** (appropriately sized for displayed equipment)
- **Notebook/Report** that covers any topic that is in the National 4-H Electric Curriculum *Electricity Excitement* Book 1 or *Investigating Electricity* Book 2, Purdue Extension website Level 1 activities/project sheets, or from the appropriate level of the Skills & Knowledge Chart.

## **LEVEL 2 (Grade 4)** *Last modified 9/2020*

### **Project Completion Recommendations:**

Complete the activities as instructed in the manual and fill out the "[4-H Club General Record Sheet](#)" (4-H-528) or as specified by the County Extension Office. All posters, notebooks, displays, and exhibits should include a reference list indicating where information was obtained, giving credit to the original source. This reference list may include website links, people that helped you, books, magazines, etc. It is recommended that this reference list be attached to the back of a poster or display, be the last page of the notebook, or included as part of the display or exhibit visible to the public. A judge is not to discredit an exhibit for how references are presented.

**Exhibit** one article of choice displaying proper wiring techniques, made during the current 4-H program year. It must demonstrate a minimum of five (5) or more of the appropriate level of "Skills to be Attained" items as outlined in the "4-H Electric and Electronic Skills & Knowledge Chart". **A completed copy of the "Exhibit Skills & Knowledge Sheet" must accompany the project.**

### **Exhibit Suggestions:**

- **Magnetic Powered Shake Flashlight** – with display
- **Circuit board** – 6" by 6" of Series/Parallel Circuit (with modifications if exhibited in Level 1)
- **Electromagnet**
- **Galvanometer**
- **Electric Motor**
- **Poster board** (22" by 28")
- **Display** (appropriately sized for displayed equipment)
- **Notebook/Report** that covers any topic that is in the National 4-H Electric Curriculum *Electricity Excitement* Book 1 or *Investigating Electricity* Book 2, Purdue Extension website Level 2 activities/project sheets, or from the appropriate level of the Skills & Knowledge Chart.

## **LEVEL 3 (Grade 5)** *Last modified 9/2020*

### **Project Completion Recommendations:**

Complete the activities as instructed in the manual and fill out the "[4-H Club General Record Sheet](#)" (4-H-528) or as specified by the County Extension Office. All posters, notebooks, displays, and exhibits should include a reference list indicating where information was obtained, giving credit to the original source. This reference list may include website links, people that helped you, books, magazines, etc. It is recommended that this reference list be attached to the back of a poster or display, be the last page of the notebook, or included as part of the display or exhibit visible to the public. A judge is not to discredit an exhibit for how references are presented.

**Exhibit** one article of choice displaying proper wiring techniques, made during the current 4-H program year. It must demonstrate a minimum of five (5) or more of the appropriate level of "Skills to be Attained" items as outlined in the "4-H Electric and Electronic Skills & Knowledge Chart". **A completed copy of the "Exhibit Skills & Knowledge Sheet" must accompany the project.**

### **Exhibit Suggestions:**

- **Wiring Project** – (ie. extension cord, trouble light, wire sizes and uses, plug configurations, test equipment, etc.)
- **Electrical tool and supply kit**

- **Poster board** (22" by 28")
- **Display** (appropriately sized for displayed equipment)
- **Notebook/Report** that covers any topic that is in the National 4-H Electric Curriculum *Wired for Power* Book 3, Purdue Extension website Level 3 activities/project sheets, or from the appropriate level of the Skills & Knowledge Chart.

#### **LEVEL 4 (Grade 6)** *Last modified 9/2020*

##### **Project Completion Recommendations:**

Complete the activities as instructed in the manual and fill out the "[4-H Club General Record Sheet](#)" (4-H-528) or as specified by the County Extension Office. All posters, notebooks, displays, and exhibits should include a

reference list indicating where information was obtained, giving credit to the original source. This reference list may include website links, people that helped you, books, magazines, etc. It is recommended that this reference list be attached to the back of a poster or display, be the last page of the notebook, or included as part of the display or exhibit visible to the public. A judge is not to discredit an exhibit for how references are presented.

**Exhibit** one article of choice displaying proper wiring techniques, made during the current 4-H program year. It must demonstrate a minimum of five (5) or more of the appropriate level of "Skills to be Attained" items as outlined in the "4-H Electric and Electronic Skills & Knowledge Chart". **A completed copy of the "Exhibit Skills & Knowledge Sheet" must accompany the project.**

##### **Exhibit Suggestions:**

- **Wiring** – Wire a lamp. The lamp can be a re-wired lamp or one that is built new.
- **Electrical tool and supply kit**
- **Poster board** (22" by 28")
- **Display** (appropriately sized for displayed equipment)
- **Notebook/Report** that covers any topic that is in the National 4-H Electric Curriculum *Wired for Power* Book 3, Purdue Extension website Level 4 activities/project sheets, or from the appropriate level of the Skills & Knowledge Chart.

#### **LEVEL 5 (Grade 7-12)** *Last modified 9/2020*

##### **Do either an Electric power or Electronics project**

Complete the activities as instructed in the manual and fill out the "[Advance Electric/Electronics 4-H Club Record Sheet](#)" or as specified by the County Extension Office. All posters, notebooks, displays, and exhibits should include a reference list indicating where information was obtained, giving credit to the original source. This reference list may include website links, people that helped you, books, magazines, etc. It is recommended this reference list be attached to the back of a poster or display, be the last page of the notebook, or included as part of the display or exhibit visible to the public. A judge is not to discredit on exhibit for how references are presented. Each county may submit one advanced electric and one advance electronic exhibit to the state fair.

**Exhibit** one article of choice, displaying proper wiring techniques, made during the current 4-H program year that demonstrates a minimum of five (5) or more of the appropriate level of "Skills to be Attained" items as outlined in the "4-H Electric and Electronic Skills & Knowledge Chart". **A completed copy of the "Exhibit Skills & Knowledge Sheet" must accompany the project.**

**Exhibit Suggestions:**

- **Equipment Wiring** – including but not limited to: parts identification, appliance repair, lamps and other lighting, equipment wiring, control system, security system, topic that covers safety, motors/generators, electric heating, heat pumps, AC, water heaters, and other electric equipment.
- **Home Wiring** – included by not limited to any circuits found in the wiring of a house or “barn”, service entrance, switching, receptacles, generator transfer circuit, safety, electrical math, and others.
- **Electronic Equipment** – Any project or kit containing transistors or integrated circuits or vacuum tubes such as radio, TV, computer, robot, cell phone, and others.
- **Poster board** (22” by 28”)
- **Display** (appropriately sized for displayed equipment)
- **Notebook/Report** that covers any topic that is in the National 4-H Electric Curriculum *Entering Electronics*, Purdue Extension website Level 5 activities/project sheets, or from the appropriate level of the Skills & Knowledge Chart.

**Video Presentation** Create a video showing the work accomplished and skills learned. This video should include the same type of information as required in written notebook listed above. This video is to be no more than ten minutes in length and formatted as MP4 and submitted on a thumb drive. This video can also be uploaded to a YouTube account with the video being made public and the link submit

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