

drone interacts with the outside world. Examples include: field scouting, surveying damage from natural disasters, drones used in commercial applications and settings, drones used for structural engineering, etc. Video should not exceed 5 minutes. Exhibitors must provide a hard copy QR code for viewing. Exhibitors are encouraged to test their codes or links on several devices to check for appropriate permissions for public viewing.

Prefabricated cards from commercially available card programs will NOT be accepted. Note which software program was used.

Class 904 **4-H Promotional Flier:** Create flier on 8½" x 11" page using a commercially available graphics software package. Fliers can be a whole page or folded flier.

COMPUTERS

COMPUTERS GUIDELINES

- Learn about hardware and software; Discuss Internet safety; Create and save data; Use Internet search engines; Take apart a computer; Participate in a chat room; Create a newspaper or magazine; Build your own computer system; Design a website; Develop a multimedia presentation; Use spreadsheets.
- This category gives 4-H Members a chance to display their knowledge of computers. Through participation in this category 4-H Members will develop presentations that show judges their knowledge in the different aspects of computer science. Involvement in STEM Computers gives participants a first-hand experience in modern technology. For help getting started with this project contact your county extension office.
- The name and county of each exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks so owner of the exhibit may be identified if the entry tag is separated from the exhibit.
- Demonstration boards should include an overall title for the display, plus other necessary labeling.
- Please refer to the General Rules for the policy regarding firearms, items with a blade, and other related items.
- Please refer to the General Rules for the policy regarding use of copywritten images.
- **Team Entries:** To qualify for entry at the Nebraska State Fair team materials entered in DEPT H., DIV 860, CLASS 7 – Maker Space/Digital Fabrication must clearly be the work of a team instead of an individual, and must have at least 50% of all team members enrolled in 4-H. Additionally, all enrolled 4-H members on the team should complete and attach an entry tag to the materials. A supplemental page documenting the individual contributions to the project should be included. The entry will be judged as a team, with all team members receiving the same ribbon placing.
- Scoresheets, forms, contest study materials, and additional resources can be found at <http://go.unl.edu/ne4hcomputers>
- Educational resources can be found at: https://4hcurriculum.unl.edu/index.php/main/program_project/123

DEPT. H / DIV. 860 COMPUTERS

COMPUTER MYSTERIES: UNIT 1

GENERAL INFORMATION [Scoresheet WCF83]:

- Computer Posters should be mounted on a 14"x22" poster either in a vertical or horizontal arrangement.
- Computer Posters should be based on a computer theme, such as "How a Computer Works," "How to Use a Computer," or "Computers in Action."

(NOT Eligible for State Fair)

- Class 901 **Computer Poster:** Create a poster. Examples might include hardware, software programs, how to take care of a computer, or operating systems.
- Class 902 **Computer Art Poster:** Exhibit should be created on at least an 8½"x11" page using a commercially available graphics software package and printer/plotter.
- Class 903 **Computer Designed Greeting Card:** Exhibit will consist of six greeting cards, each for a different occasion/holiday. Exhibit should be created on 8½" x 11" paper using a commercially available graphics program and a printer/plotter. Cards should vary in fold and design.

COMPUTER MYSTERIES: UNIT 2

[Scoresheets SF276-277]

- Class 1 **Computer Application Notebook [SF277]:** 4-H exhibitor should use computer application to create a graphic notebook utilizing computer technology. 4-H Member may create any of the following: greeting card (5 different cards such as a birthday, wedding, anniversary, sympathy, get well or other); a business card (3 cards for 3 different individuals and businesses); menu (minimum of 2 pages including short description of foods and pricing); book layout (I-book); promotional flyer (3 flyers promoting 3 different events); newsletter (minimum 2 pages); or other: examples such as precision farming or family business logo, etc. This exhibit consists of a notebook (8.5x11") which should include (1) a detailed report describing: (a) the task to be completed; (b) the computer application software required to complete the task; (c) specific features of the computer application software necessary for completing the task; (2) a print out of your project. Project may be in color or black and white.
- Class 2 **Produce a Computer Slideshow Presentation [SF276]:** Using presentation software, a 4-H exhibitor designs a multimedia computer presentation on one topic related to youth. A notebook with a printout of all the slides should be submitted. Slideshow should include a minimum of 10 slides and not more than 25. Incorporate appropriate slide layouts, graphics, animations, and audio (music or voice and transition sounds do not count). Each slide should include notes for a presenter. All slideshows must be uploaded and exhibitors must provide a hard copy QR code for viewing. Exhibitors are encouraged to test their codes or links on several devices to check for appropriate permissions for public viewing.

COMPUTER MYSTERIES: UNIT 3

[Scoresheets SF275-276 & SF1050-1051]:

- Class 3 **Produce an Audio/Video Computer Presentation [SF276]:** Using presentation software, a 4-H exhibitor designs a multimedia computer presentation on one topic related to youth, including audio and/or video elements. A notebook with a printout of all the slides should be submitted. The presentation should be at least 2 minutes in length and no more than 5 minutes in length, use appropriate graphics and sound and either a video clip, animation, or voice over and/or original video clip. Exhibitors must provide a hard copy QR code for viewing. It is recommended to test codes or links on several devices to check for appropriate permissions for public viewing.
- Class 4 **How to STEM (Science, Technology, Engineering and Math) Presentation [SF276]:** Youth design a fully automated 2 to 5 minute 4-H "how to" video. Submissions should incorporate a picture or video of the 4-H Member, as well as their name (first name only), age (as of January 1 of the current year), years in 4-H, and their personal interests or hobbies. Exhibitors must provide a hard copy QR code for viewing. It is recommended to test codes or links on several devices to check for appropriate permissions for public viewing.
- Class 5 **Virtual Platform Presentation [SF176]:** Youth design a fully automated education presentation using any multimedia platform such as TikTok, YouTube, Canva, Canvas, etc. Submissions may include a notebook, poster, etc. explaining the process, experience, and/or presentation. All submissions must include a link to the virtual presentation. Exhibitors must provide a hard copy QR code for viewing. It is recommended to test codes or links on several devices to check for appropriate permissions for public viewing.
- Class 6 **Create a Web Site/Blog or App [SF275]:** Design a simple

website, blog, or app for providing information about a topic related to youth. Include an explanation of why the entry was created. Any current website, blog, or app development platform is accepted such as Google Sites, iBuildApp, Wix, etc. If the website, blog, or app isn't live, include all files on a flash drive in a plastic case. Exhibitors must provide a hard copy QR code for viewing. It is recommended to test codes or links on several devices to check for appropriate permissions for public viewing.

Class 7

3D Printing [SF1050]: 3D printing uses plastic or other materials to build a three-dimensional (3D) object from a digital design (including 3D Pen Creation). Youth may use original designs or someone else's they have redesigned in a unique way. Exhibits will be judged based on the motivation and/or problem identified. For example, 3D objects printed as part of the design process for a robot or other engineering project. Must include design notebook that addresses the following questions:

1. What was the motivation for your design or the problem you were solving with your design? i.e. Is your item a functional or decorative piece?
2. Please include a picture of original design, citation of designer/website OR if design is completely original (you created it using CAD software), then state that it's original. If item was not completely original, indicate what you did to the original design to modify it to better meet the design problem stated in #1 above. If its design was modified multiple times, please indicate what change was made with each modification, and what prompted the need for the change. (i.e. I printed it and the design was too fragile, so I resliced the print to make thicker external walls, or to have a denser infill.)
3. Define your process for designing/printing. What software and/or hardware was used (indicate type of 3D printer or if item was created with 3D pen)?
4. What materials were selected for your project?
5. If your final design has any moving parts, define how you determined appropriate allowance in your design.
6. Identify any changes that you would make to improve your design.

Class 8

Maker Space/Digital Fabrication [SF1051]: This project is a computer-generated project created using a laser cutter, vinyl cutter, heat press or CNC router. Vector or 3D based software such as Corel Draw or Fusion 360 would be an example of an appropriate software used to create your finished project. Project should include a notebook with the following:

1. What motivated you to create this project
2. Software and equipment used
3. Directions on how to create the project
4. Prototype of plans
5. Cost of creating project
6. Alterations or modifications made to original plans
7. Changes you would make if you remade the project

Team Entry Option: To qualify for entry at the Nebraska State Fair team, materials entered in Class 8 – Maker Space/Digital Fabrication must clearly be the work of a team instead of an individual, and must have at least 50% of all team members enrolled in 4-H. Additionally, all enrolled 4-H members on the team should complete and attach an entry tag to the materials. A supplemental page documenting the individual contributions to the project should be included. The entry will be judged as a team, with all team members receiving the same ribbon placing.

ELECTRICITY

ELECTRICITY GUIDELINES

- In this category 4-H Members have the opportunity to create informational exhibits about the different aspects of electricity.

Through involvement in this category 4-H Members will be better educated about electricity and be able to present their knowledge to others.

- The name and county of each exhibitor should appear separately on the back of each board, poster, or article and on the front cover of notebooks so the exhibitor may be identified if the entry tag is separated from the exhibit.
- Several classes require a display board which should be a height of 24" and not to exceed ¼" thickness. A height of 24 7/8" is acceptable to allow for the saw kerf (width) if two 24" boards are cut from one end of a 4-foot by 8-foot sheet of plywood. Nothing should be mounted within ¾" of the top or bottom of the board. (Example: Woodworking & Electricity).
 - Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
 - Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
 - Demonstration boards should include an overall title for the display, plus other necessary labeling.
 - Reports should be written using the scientific method whenever possible (Background; Question or Hypothesis; What you planned to do and What you did; Method Used and Observations; Results and What you learned). All reports should be computer generated and enclosed in a clear plastic cover. The reports should be attached securely to the display.
- Scoresheets, forms, contest study materials, and additional resources can be found at <https://go.unl.edu/ne4helectricity>
- Educational resources can be found at: https://4hcurriculum.unl.edu/index.php/main/program_project/126

DEPT. H / DIV. 870

ELECTRICITY

GENERAL INFORMATION [Scoresheets SF224-231]:

- Explore electrical insulation; Learn about the effects of magnetism; Build an electromagnet or electric motor; Decode circuit diagrams; Build circuits and test voltages; Build a rocket launcher or a burglar alarm; Measure electrical usage; Replace electrical switches; Evaluate light bulbs and test for electrical power; Explore LED's and SCR's, transistors, and the construction of an SCR intruder alarm; Learn the basics of solid-state electronics; Build a blinking flasher and an amplifier.

MAGIC OF ELECTRICITY: UNIT 1

[Scoresheet SF230]:

(NOT Eligible for State Fair)

- Class 901 **Bright Lights:** Create your own flashlight using items found around your house. Flashlights should be made out of items that could be recycled or reused.
- Class 902 **Control the Flow:** Make a switch or circuit that can open and close. Items used could include, but are not limited to the following: D cell battery, battery holder, insulated wire, 2- or 2.5-volt light bulb, bulb holder, paper clip, cardboard, brass paper fasteners.
- Class 903 **Fork in the Road:** Construct one parallel and one series circuit. Items used could include, but are not limited to the following: D cell battery, battery holder, insulated wire, 2- or 2.5-volt light bulb, bulb holder, paper clip, cardboard, brass paper fasteners.
- Class 904 **Other Electric or Electronic Exhibit, Poster, or Display:** Exhibits that are made from household, reusable, or recyclable items. Projects could include, but are not limited to the following: nonwooden quiz box, non-wooden steady hand tester, a battery-operated simple circuit, homemade battery powered electric motor, insulator vs conductor, etc.

INVESTIGATING ELECTRICITY: UNIT 2

[Scoresheet SF230]: