

## **AEROSPACE/ROCKETS Classes**

### **County Only Classes (\*\*Denotes NOT State Fair Eligible) (Scoresheet CF92)**

PREMIUMS: Purple, \$4.00; Blue, \$3.00; Red, \$2.00; and White, \$1.00

Directions can be found in the Aerospace Manuals.

- \*\*H850901 **Kite** - Kite must be homemade, no purchased kits.
- \*\*H850902 **Model Airplane or Glider**
- \*\*H850903 **Rocket** - Any skill level rocket with plastic fins
- \*\*H850904 **Rocket** - Any skill level rocket with wooden fins and plastic body tubes

H850001 **Rocket (Scoresheet SF92)**  
Any Skill Level Rocket with **wooden fins and cardboard body tubes** painted by hand or air brush.

H850002 **Aerospace Display (Scoresheet SF93)**  
Poster or Display Board that displays or exemplifies one of the principles learned in the Lift Off project. Examples include: display of rocket parts and purpose, explaining the parts of a NASA rocker or shuttle, interview of someone in the aerospace field, or kite terminology. Include notebook containing terminology (definition), and what was learned. Display can be any size up to 28 inches by 22 inches.

H850003 **Rocket (Scoresheet SF92)**  
Any Skill Level Rocket with **wooden fins and cardboard body tubes** painted using commercial application (example commercial spray paint).

PREMIUMS: Purple, \$5.00; Blue, \$4.00; Red, \$3.00; and White, \$2.00

H850004 **Self-Designed Rocket (Scoresheet SF92)**  
Any Self-Designed Rocket with **wooden fins and cardboard body tubes**.

## **DRONES**

PREMIUMS: Purple, \$4.00; Blue, \$3.00; Red, \$2.00; and White, \$1.00

H850005 **Drone Poster (Scoresheet SF93)**  
Exhibit must be designed to educate yourself and others on one or more of the following topics: drone technologies, use of drones, the different types of drones, types of training needed to operate drones, and the laws and regulations users must follow. Posters can be any size up to 28 inches by 22 inches.

H850006 **Drone Video (Scoresheet SF93)**  
Exhibit must demonstrate how the 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. Video should not exceed 5 minutes. Videos should also be uploaded to a video streaming application and exhibitors must provide a hard copy QR code for viewing. Exhibitors should test their codes or links on several devices to check for appropriate permissions for public viewing. See the State Fairbook for qualifying videos deadlines.

## **STEM COMPUTERS**

This category gives 4-H'ers a chance to display their knowledge of computers. Through participation in this category 4-H'ers 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.

### **RULES:**

1. 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.

2. Demonstration boards should include an overall title for the display, plus other necessary labeling.
3. Reports should be written using the scientific method whenever possible (Background, the Question or hypothesis, what you plan to do and what you did, Method used and observations, Results: 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.
4. Please refer to the State Fair General Rules & Info for the policy regarding firearms, items with a blade, and other related items.
5. Please refer to the General Rules in the beginning of this fairbook for the policy regarding use of copywritten images.
6. Premier 4-H Science Award is available in this area.
7. **Team Entries:** To qualify for entry at the Nebraska State Fair team materials entered in H860008-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. 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.

**Entries per Individual** - One entry per exhibitor per class. Limit of 4 entries per exhibitor per project.

**All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.**

Please see General Information for more details.

Scoresheets and additional resources can be found at <https://go.unl.edu/ne4hcomputers>.

## COMPUTERS, CLASSES

PREMIUMS: Purple: \$4.00; Blue: \$3.00; Red: \$2.00; White, \$1.00

### COMPUTER MYSTERIES UNIT 1 (\*\*Denotes NOT State Fair Eligible)

- \*\*H860901 Create a Poster (Scoresheet CF83)**  
Poster on a lesson learned in Unit 1. Examples might include: hardware, software programs, how to take care of a computer and operating systems. Posters can be 14 inches x 22 inches either in vertical or horizontal arrangement.
- \*\*H860902 Computer Designed Greeting Cards (Scoresheet CF83)**  
Exhibit will consist of six greeting cards, each for a different occasion/holiday. Exhibit should be created on 8 ½ inches x 11 inches paper using a commercially available graphics program and a color printer/plotter or single color printer/plotter. The cards should vary in folds and design. Prefabricated cards from commercially available card programs will NOT be accepted. No theme required. May be displayed on poster or in a 3-ring notebook.
- \*\*H860903 Scanner Display (Scoresheet CF83)**  
Exhibit will consist of one or more pictures scanned into your computer and printed on your printer. Exhibit should explain what hardware and software was used to create it.

### COMPUTER MYSTERIES UNIT 2

- H860001 Computer Application Notebook (Scoresheet SF277)**  
4-H exhibitor should use computer application to create a graphic notebook utilizing computer technology. 4-H'ers 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 (8.5 inches x 11 inches) 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) print out of your project. Project may be in color or black and white.

H860002 **Produce a Computer Slideshow Presentation (Scoresheet 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 no 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 presentation. All slideshows must be uploaded. State Fair qualified entries should be submitted to <https://go.unl.edu/2024nesfset> by August 10, 2024. Or entries can be uploaded to a cloud sharing service and exhibitors MUST provide a hard copy QR code for viewing. Exhibitors should test their codes or links on several devices to check for appropriate permissions for public viewing.

### COMPUTER MYSTERIES - UNIT 3

- H860003 **Produce an Audio/Video Computer Presentation (Scoresheet 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, appropriate graphics, sound and either a video clip, animation, or voice over and/or original video clip. State Fair qualified entries should be submitted to <https://go.unl.edu/2024nesfset> by August 10, 2024. Or entries can be uploaded to a cloud streaming service and exhibitors **MUST** provide a hard copy QR code for viewing. Exhibitors should test their codes or links on several devices to check for appropriate permissions for public viewing.
- H860004 **How to STEM (Science, Technology, Engineering and Math) Presentation (Scoresheet 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-Her, 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. State Fair eligible entries should be submitted to <http://go.unl.edu/2024nesfset> by August 10, 2024. Or videos can be uploaded to a video streaming application and exhibitors **MUST** provide a hard copy QR code for viewing. Exhibitors should test their codes or links on several devices to check for appropriate permissions for public viewing.
- H860005 **Virtual Platform Presentation** – Youth design a fully automated education presentation using any multimedia platform such as Tik Tok, 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. State Fair qualified entries should be submitted to <https://go.unl.edu/2024nesfset> by August 10. Entries can be uploaded to a cloud sharing service. 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.
- H860006 **Create a Website, Blog or App (Scoresheet 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. State Fair qualified entries should be submitted to <https://go.unl.edu/2024nesfset> by August 10. Entries can be uploaded to a cloud sharing service. 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.
- H860007 **3D Printing (Scoresheet SF1050)**  
3D printing uses plastic or other materials to build a three-dimensional (3D) object for a digital design (including 3D Pen Creation). Youth may use original designs or someone else’s they have re-designed 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 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. 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 it 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.

H860008

#### **Maker Space/Digital Fabrication (Scoresheet 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 CorelDRAW 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 this project.

4. Prototype of plans.

5. Cost of creating project.

6. Iterations or modifications made to original plans.

7. Changes you would make if you remade the project.

Team Entry Option: To qualify for entry materials entered in H860008 – Maker Space/Digital Fabrication must clearly be the work of a team instead of an individual, 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 material. 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.

### **STEM ELECTRICITY**

In this category 4-H'ers have the opportunity to create informational exhibits about the different aspects of electricity. Through involvement in this category 4-H'ers will be better educated about electricity and be able to present their knowledge to others.

#### **RULES:**

1. 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.
2. Several classes require a display board which should be a height of 24 inches and not to exceed ¼ inch in thickness. A height of 24 7/8 inches is acceptable to allow for the saw kerf (width) if two 24-inch boards are cut from one end of a 4 feet x 8 feet sheet of plywood. Nothing should be mounted within ¾ inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
3. Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
4. Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
5. Demonstration boards should include an overall title for the display, plus other necessary labeling.
6. Reports should be written using the scientific method whenever possible (Background, the Question or hypothesis, what you plan to do and what you did, Method used and observations, Results: 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.

**Entries per Individual** - One entry per exhibitor per class. Limit of 4 entries per exhibitor per project.

**All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.**

Premier 4-H Science Award is available in this area. Please see General Information for more details.

Scoresheets and additional resources can be found at <https://go.unl.edu/ne4helectricity>.