STEM COMPUTERS (DEPARTMENT H)

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 of the different aspects of computer science. Involvement in STEM Computers gives participants a first-hand experience of modern technology.

Each 4-H/FFA exhibitor may enter up to 3 **different** items in each class.

GENERAL INFORMATION - 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 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. 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. Refer to the General Rules for the policy regarding use of copywritten images.

COMPUTERS -DIVISION 860

BOOTING UP - UNIT 1
Class:
901. Design 2 greeting cards using available software.
902. Set of 5 posters using standard capabilities of WordPerfect, Word, or other software. Poster topics may be any topic, at least one should promote 4-H. On 8 ½ x 11 printer paper or other quality paper.

COMPUTER MYSTERIES - UNIT 2
Class
1. *COMPUTER APPLICATION NOTEBOOK– 4-H exhibitor should use computer application to create a graphic notebook utilizing computer technology. 4-H'er 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 x 11 inches) which should include a (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.
2. *PRODUCE A COMPUTER SLIDESHOW PRESENTATION – 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.

COMPUTER MYSTERIES - UNIT 3
Class
3. *PRODUCE AN AUDIO/VIDEO COMPUTER PRESENTATION - 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.
4. * HOW TO STEM (SCIENCE, TECHNOLOGY, ENGINEERING AND MATH) PRESENTATION - 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'er, 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.
5. *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.
6. *CREAT A WEBSITE/BLOG OR APP - 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.
7. *3D PRINTING – 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 robot or other engineering project. Must include design notebook that addresses the following questions:
   a. What was the motivation for your design or the problem you were solving with your design? ie., is your item a functional or decorative piece?

b. 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. ie., 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.

c. 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)?

d. What materials were selected for your project?

e. If your final design has any moving parts, define how you determined appropriated allowance in your design.

f. Identify any changes that you would make to improve your design.

8. *MAKER SPACE/DIGITAL FABRICATION – This project is a computer generated projected 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:

a. What motivated you to create this project?
b. Software and equipment used.
c. Directions on how to create the project.
d. Prototype of plans
e. Cost of creating project
f. Iterations or modifications made to original plans.
g. Changes you would make if you remade the project.