CLASS 3 - Rocket - Any Skill level Rocket with wooden fins and cardboard body tubes painted using commercial application for example, commercial spray paint. SF

CLASS 7 - Rocket - Any Skill level Rocket with plastic fins and cardboard body tubes painted using commercial application for example, commercial spray paint.

Self-Designed Rocket

CLASS 4 - Rocket - Any self-designed rocket with wooden fins and cardboard body tubes. SF

Drones

(Anyone enrolled in Aerospace can enter these classes)

CLASS 5 - Drone Poster - Exhibit must be designed to educate yourself and others on one or more of the following topics: drone technologies, uses 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" by 22". SF

CLASS 6 - Drone Video - 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 need to be submitted to Amy Timmerman at atimmerman2@unl.edu by August 17, 2020 if chosen for State Fair). SF

DEPARTMENT H, DIVISION 860 - COMPUTERS
Premiums: Purple, $4.00; Blue, $3.00; Red, $2.50; White, $2.00

One entry per each class. The name and county of each exhibitor should appear separately on the back of each 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.

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.

Team Entries: To qualify for entry at the Nebraska State Fair team materials entered in Class 8 - 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.

Computer Mysteries - Unit 1

CLASS 15 - Computer Designed Greeting Card - Exhibit will consist of six greeting cards, each for a different occasion/holiday. Cards should be created on 8 1/2" x 11" page using commercially available graphics program and either single color or color printer/plotter. The cards should vary in folds and design. Tell which software program was used. Prefabricated cards from commercially available card programs will NOT be accepted. No theme required. Put cards in some type of protective cover.

CLASS 16 - Internet Exploration - Exhibit will be a notebook consisting of the following: 1) print-out of five web sites, 2) what you liked and did not like about each website and 3) how you

will use the internet in the future.

CLASS 17 - 4-H Promotional Flyer - Exhibit should be created on 8 1/2" x 11" page using a commercially available graphics software package. Flier can be color or black and white. Fliers can be a whole page or a folded flier. Put exhibit in protective cover.

CLASS 18 - Computer Art Poster (Color) - Exhibit should be created on at least an 8 1/2" x 11" page using a commercially available graphics software package and color printer/plotter. No theme required.

Computer Mysteries - Unit 2

CLASS 1 - Computer Application Poster - 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 (8.5x11 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. SF

CLASS 2 - Produce a Computer Slideshow Presentation - Using presentation software. 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 presenter. All slideshows must be uploaded. A notebook with a printout of all the slides should be submitted. If chosen for state fair, slide show should be emailed to Amy Timmerman atimmerman2@unl.edu before August 15. Files must be saved in a PC compatible format with county name and last name of participant before emailing. SF

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. 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. The presentation must be able to be played and viewed on a PC using Windows Media Player, Real Player, iTunes or QuickTime Player. SF

CLASS 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-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. Videos should be designed for web viewing. Any of the following formats will be accepted; .mpeg, .rm, .wmv, .mp4, .mov, .ppt, or .avi. SF

CLASS 5 - Create a Web Site/Blog or App - Design a simple Web site/blog or app for providing information about a topic related to youth using either software programs such as an HTML editor like Microsoft's FrontPage or Macromedia's Dreamweaver, and image editor like IrfanView or GIMP OR online using a WIKI such as Google Sites. If the Website, Blog, or App isn't live include all files comprising the Web site, Blog or App should be submitted on a CD-

ROM in a plastic case along with the explanation of why the site was created. If developed using a WIKI or other online tool include a link to the website in the explanation of why the site was created. SF

CLASS 6 - 3D Printing Unique Items - 3D printing uses plastic or other materials to build a three-dimensional (3D) object for a digital design. 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 or cookie cutter. Must include design notebook with motivation or problem statement the prototype was 3D printing will include a notebook with the following: a) Define motivation/problem solved, b) Software used, c) Document purpose of material and print settings, d) Material choice (PLA, PVA, ABS, etc.), e) In-fill density, f) Moving parts. SF

CLASS 7 - 3D Pen Creation - 3D pens rapidly melt and cool plastic filament allowing the 4-H member to draw in 3D. Youth may use original designs or use a template to create their 3D item. Exhibits will be judged based on the complexity of the design and shape. 3D pen creation will include a notebook with the following: a) Copy of the template if used and description of any changes the youth created, b) If no template used - an explanation of how the creation was built, c) Must include paragraph of what the youth learned while creating their project (i.e. way to improve their next creation), d) Paragraph on how 3D pens impact science, engineering and technology. SF

CLASS 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. SF

DEPARTMENT H, DIVISION 865 - DIGITAL VIDEO PRO
Premiums: Purple, $4.00; Blue, $3.00; Red, $2.50; White, $2.00

CLASS 1 - Video. Exhibit will be a video using skills learned in the project. Include written information on how you made the video and how you edited the video.

DEPARTMENT H, DIVISION 870 - ELECTRICITY
Premiums: Purple, $4.00; Blue, $3.00; Red, $2.50; White, $2.00

One entry per each class. The name and county of each exhibitor should appear separately on the back of each board, poster or articles and on the front cover of the notebooks so owner of exhibit may be identified if the entry tag is separated from the exhibit.

Display board should be a height of 24 inches and not to exceed 1/4 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' x 8' sheet of plywood. NOTHING SHOULD BE MOUNTED WITHIN 3/4 INCH OF THE TOP OR BOTTOM OF THE BOARD. 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 the demonstration board will be judged as a woodworking exhibit. Board should include an