

2. **LABELING OF EXHIBITS** - The 4-H member's name, age, full address, county, and years in the project(s) must be on the back of the notebook, poster, or portfolio.

DEPARTMENT G	DIVISION 777			GROW A BEAUTIFUL SPACE
PREMIUM	Purple \$2.50	Blue \$2.00	Red \$1.50	White \$1.00
CLASS 401	Grow a Beautiful Space Unit 1 Portfolio Notebook – Create and complete 'Landscape Professionals & Design Principles' Unit 1 Portfolio. Present portfolio information in a three-ring binder. Give proper credit by listing the sources of photographs/images and information used.			
CLASS 402	Establish Landscape Analysis Poster - Take multiple photographs of a landscape that has been established for 10 or more years. Critique the landscape based on each of the design principles (order, unity, rhythm, balance, scale or proportion, and emphasis). Describe the spatial definition of the landscape and what different areas of the landscape "feel like". Include photos taken to support your critique. Describe what changes need to be made in the landscape to improve its characteristics and sense of space. Display on a poster mat board no larger than 22" x 28".			
CLASS 403	Grow a Beautiful Space Unit 2 Portfolio Notebook - Create and complete 'Landscape Plants & Materials' Unit 2 Portfolio. Present portfolio information in a three-ring binder. Give proper credit by listing the sources of photographs/images and information used.			
CLASS 404	Landscape Renovation Poster - Take multiple photographs of a landscape that doesn't quite look right because it doesn't reflect sound design principles. Select a landscape in which you can make at least three design recommendations. Identify how the design principles (order, unity, rhythm, balance, scale or proportion, and emphasis) could be better integrated into the landscape, and how plants or materials with specific features (size, form, color, or texture) could improve the space. Reduce the opacity of the images to 50-60 percent and sketch plants, structures, materials, and/or amenities that could improve the overall design over the original images. The poster should include the original image(s) and improved image(s) and include a short explanation of how the landscape design was improved. Display on a poster mat board no larger than 22" x 28".			
CLASS 405	Estimating Dreams Poster - Select a dream landscape as if money is not a consideration. Develop a plan drawing of the landscape. Draw landscape to scale. Identify the types of plants, structures, and amenities used in the landscape. Research the cost of the plants and amenities and the installation. Include the general cost of grading (if needed) and labor that could be associated with installation. Create a list, noting the plants that are included in the space. The quantities of plants and the structures, materials, or amenities and their cost should be included. Calculate the final total estimate. The poster should include the scale drawing of the landscape, identification of plants, structures and amenities, and cost and labor. Display on a poster mat board no larger than 22" x 28".			
CLASS 406	Site Inventory & Analysis Poster - Make an unscaled drawing of the landscape you inventoried and analyzed. Develop two drawings: a site inventory and a site analysis. The site inventory and site analysis should be communicated through a combination of written notes, graphics symbols and photographs. Display on a poster mat board no larger than 22" x 28".			
CLASS 407	Community Landscape Poster - Identify a local community space (park, nursing home, school, county fairgrounds, etc.) that needs some landscape improvements. Work through the design process and develop a detailed plan of your improvements to the space. The plan should include design principles, functional and aesthetic factors, list of plants and materials and their costs, budget for materials, labor you have available for the project, and a timeline. Take photographs of the area and draw over the photos to illustrate your final ideas. Include photographs of the finished landscape if project ideas were carried out. Display on a poster mat board no larger than 22" x 28".			
CLASS 408	Renovate the Outdoors Portfolio - Select a space that you would like to redesign. The space can be at your home, a family member's or friend's house, or somewhere in your community. Develop a scaled base map of the site and locate the existing plants and structures in the landscape. Take photographs of the landscape. Evaluate the physical properties of the site and conduct an interview with the people who live there or use the space. Think about how you would change the space and develop a plan that would implement design elements into the space. Create different drawings that will move you through the design process. You will draw concept diagrams, form compositions, preliminary drawings, and the final design. Once the final design drawing is complete, use overlays on the original photographs to show how the landscape will look compared to how it looked in the photo you originally took of the landscape. Place photographs, interview notes, concept and program statements and drawings in a portfolio.			

SCIENCE, ENGINEERING & TECHNOLOGY

(AEROSPACE, COMPUTERS, ELECTRICITY, LEGOs, ROBOTICS, GEOSPATIAL, WIND ENERGY, WOODWORKING, WELDING, ATV & SMALL ENGINES, & VETERINARY SCIENCE)

GENERAL RULES – SCIENCE, ENGINEERING & TECHNOLOGY

- GENERAL RULES** – See GENERAL RULES
- ENTRY LIMITS** – Each exhibitor is limited to one entry per class.
- DISPLAY BOARDS** – Several classes require a display board which should be a height of 24" and not to exceed ¼" in thickness. A height of 23 7/8" is acceptable to allow for saw kerf (width) if two 24" boards are cut from one end of a 4' x 8' sheet of plywood. Nothing should be mounted within ¾" of the top or bottom of the board.
- DEMONSTRATION BOARDS** – Fabricated boards 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** – All reports should be clearly written or typed and enclosed in a clear, plastic cover. The reports should be attached securely to the display.

AEROSPACE

AEROSPACE RULES

- GENERAL RULES** – See GENERAL RULES – SCIENCE, ENGINEERING & TECHNOLOGY
- ROCKET MOUNTING** – Rockets must be supported substantially to protect the rocket from breakage. Rockets are to be mounted on a base that has dimensions equal or less than 12" x 12" and the base should be ¾" thick. No metal bases. If the rocket fins extend beyond the edges of the required base (12" x 12", then construct a base that is large enough to protect the fins. The base size is dictated by the size of the rocket fins. The rockets must be mounted vertically. Please do not attach sideboards or back drops to the displays. In addition, a used engine or length of dowel pin is to be glued and/or screwed into the board and extended up into the rocket's engine mount to give it added stability.
- PREPARATION** – Rockets must be equipped as prepared for launching, with wadding and parachute or other recovery system.
- DISQUALIFICATION** – Rockets entered with live engines, wrong base size or sideboards will be disqualified. Complete factory assembled rockets will not be accepted at the State Fair.
- REPORTS** – A report, protected in a clear plastic cover, must include: 1) rocket specification, 2) a flight record for each launching (weather, distance, flight height), 3) number of launchings, and 4) flight pictures. The flight record should describe engine used, what the rocket did in flight,

and recovery success. Points will not be deducted for launching, flight, or recovery failures described. This includes any damage that may show on the rocket.

6. **JUDGING** – Judging is based upon display appearance, rocket appearance, workmanship, design or capabilities for flight, and number of times launched. Three launches are required to earn the 25 launch points given on the score sheets. Only actual launches count, misfires will not count towards one of the three required launches.
7. **SELF DESIGNED ROCKETS** – For self-designed rockets only, please include a digital recorded copy of one flight. In the documentation please include a description of stability testing before the rocket was flown.
8. **LEVELS** – 4-H rocket project levels are not intended to correspond to the National Association of Rocketry model rocket difficulty ratings or levels. Exhibitors may only enter exhibits at one level of competition.
9. **TOP EXHIBIT** – A top exhibit will be selected from those exhibits receiving purple ribbons in the aerospace division.
10. **MANUALS** – Printed materials are available from the Johnson County Extension Office for all currently enrolled 4-H members in Johnson County.

DEPARTMENT H		DIVISION 850			AEROSPACE
PREMIUM	Purple \$2.50	Blue \$2.00	Red \$1.50	White \$1.00	
CLASS 901	Level 1 Display – Display exemplifying one of the principles learned in the Pre-Flight project.				
CLASS 1	Level 2 Rocket – Any skill level 2 rocket with wooden fins painted by hand or air brush.				
CLASS 2	Level 2 Display – Display exemplifying one to the principles learned in the <i>Lift-Off</i> project. Examples include: display of rocket parts and purpose, interview of someone in the aerospace field, or kite terminology. Display can be any size up to 28" x 22".				
CLASS 3	Level 2 Rocket – Any skill level 2 rocket with wooden fins painted using commercial application (example: commercial spray paint).				
CLASS 4	Level 3 Rocket – Any skill level 3 rocket with wooden fins painted by hand or air brush.				
CLASS 5	Level 3 Display – Display exemplifying one of the principles learned in the <i>Reaching New Heights</i> project. Examples include: airplane instrumentation, kite flying, or radio-controlled planes. Display can be any size up to 28" x 22"				
CLASS 6	Level 3 Rocket – Any skill level 3 rocket with wooden fins painted using commercial application (example: commercial spray paint).				
CLASS 7	Level 4 Rocket – Any skill level 4 rocket with wooden fins or any self-designed rocket.				
CLASS 8	Level 4 Display – Display exemplifying one of the principles learned in the <i>Pilot in Command</i> project. Examples include: flying lessons, or careers in aerospace. Display can be up to 28" x 22				
CLASS 20	Careers Interview – Interview someone who is working in the field of aerospace and research that career. Interviews can either be written or in a multimedia format (CD/DVD). Written interviews should be in a notebook. Written reports should be three to five pages, double-spaced, 12-point font, and 1" margins. Multimedia reports should be between three and five minutes in length.				

COMPUTERS

COMPUTER RULES

1. **GENERAL RULES** – See GENERAL RULES – SCIENCE, ENGINEERING & TECHNOLOGY
2. **TOP EXHIBIT** – A top exhibit will be selected from those exhibits receiving purple ribbons in the computer division.
3. **MANUALS** – Printed materials are available from the Johnson County Extension Office for all currently enrolled 4-H members in Johnson County.

DEPARTMENT H		DIVISION 860			COMPUTERS
PREMIUM	Purple \$2.50	Blue \$2.00	Red \$1.50	White \$1.00	
COMPUTER MYSTERIES UNIT 1					
CLASS 901	Computer Hardware Poster – Should exemplify something learned about computer hardware in Computer Mysteries Unit 1. Poster can be any size up to 28" x 22".				
CLASS 902	Computer Software Poster – Should exemplify something learned about computer software in Computer Mysteries Unit 1. Poster can be any size up to 28" x 22".				
COMPUTER MYSTERIES UNIT 2					
CLASS 1	Computer Application Demonstration – 4-H exhibitor demonstrates how to accomplish a test using a computer application software such as a spreadsheet, database, publishing, graphic design, accounting or precision farming program. The exhibit consists of a notebook (8.5" x 11") which should include: 1. A cover page; 2. Detailed report describing: a. the task to be completed, b. the computer application software needed to complete the task, c. specific features of the computer application software necessary for completing the task, and d. other tasks that can be accomplished using the computer application software; 3. Print out of your project. (Examples: design a logo for your school; enhance a digital image for a newspaper story; manage a checking account; create a poster to publicize an event; or to design scrapbook pages, or other).				
CLASS 2	Produce a Computer Slideshow Presentation – Using presentation software like Microsoft PowerPoint. The 4-H exhibitor develops a slideshow about a topic related to youth. The slideshow should include a minimum of 10 slides and no more than 25. Incorporate appropriate slide layouts, graphics, and animations. Each slide should include notes for a presenter. The exhibit includes a copy of the presentation saved to a CD-ROM along with a printout of the notes pages in a clear plastic cover. Slide presentation should relate to one topic.				
COMPUTER MYSTERIES UNIT 3					
CLASS 4	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 two minutes in length and no more than five 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.				
CLASS 5	How to STEM (Science, Technology, Engineering and Math) Presentation – Youth design a fully automated two to five 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 st 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, .ov, .ppt, or .avi.				
CLASS 6	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 web site, blog, or app isn't live include all files comprising the web site 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.				
CLASS 7	3D Printing Unique Item – 3D printing uses plastic or other materials to build a three-dimensional object from 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 complexity of the design and shape. 3D UNIQUE OBJECT: 3D objects printed for their own sake. May be an art design, tool, or other object. 3D printing will include a notebook with the following: Software used to create 3D design; Design or, if using a re-design, the original design and the youth's design with changes; and Orientation on how the object was printed.				