

Department H-General Youth

Home Environment, Electricity, Entomology, Geology, Photography, SpaceTech, Forestry, Woodworking, Posters, Leadership, Citizenship, STEAM, STEAM-Ag Mechanics, STEAM-Architectural Block Construction, Place Setting, Day Camp, Cloverbuds, Other Projects

Superintendents: Department H-Janice & Don Reiss **Assistants:** Jim Cormode, Wanda Small, Aaron Weaver

Jr. Superintendents: Hallie Noll Emmy Wood Conner Weaver Noah Weaver

Check projects within this department for judging times.

Additional Premium Money: James Cormode sponsors \$20 premium money for Electricity.

Free State Electric Cooperative sponsors \$150 premium money for Electricity.

Linda Bottorff, in memory of Carl & Laverne Sternsdorff, sponsors \$10 premium money for photography.

Ralph & Rita Madden, sponsor \$25 premium money for Photography.

Farmerettes FCE, sponsors \$25 premium money for posters that encourages Reading.

Spielman Fertilizer, sponsor \$25 premium money for Rocketry.

David & Brenda Royer, in memory of Willard & Ruby Royer, sponsors \$15 premium money for Woodworking.

Spielman Fertilizer, sponsors \$25 premium money for Woodworking.

Gary Wilson family, in memory of Mary Lou Wilson, sponsor \$15 premium money for Woodworking.

Rick & Debbie Clement, sponsor \$20 premium money for Place Setting.

Special Awards:

Class Champion & Reserve Awards:

Linda & John Funk, sponsor an award for Top Rocket Display.

Cliff & Barbara Metcalfe, sponsor an award for Overall Champion and Overall Reserve Champion in Home Environment.

Dennis & Judy Smith sponsor award to the Photography Champion.

Edith Lewman, in memory of Robert Lewman, sponsor an award for Reserve Champion in Photography.

Karl Gfeller, in memory of Yasu Gfeller, sponsors an award for Champion Leadership Poster.

Karl Gfeller, in memory of Yasu Gfeller, sponsors an award for Champion Citizenship Poster.

Karen Bell sponsors an award for the Architectural Block Construction project.

.Section I - Home Environment

Purple/Blue - \$3.50; Red -\$ 3.00; White -\$ 1.75

Site judging on July 26 as scheduled; exhibit/display judging Wednesday, August 3 as scheduled.

Special Awards: Cliff & Barbara Metcalfe, sponsor an award for Overall Champion and Overall Reserve Champion in Home Environment.

Home Environment Rules:

1. Enter project exhibits Wednesday with Open Class Clothing Department from 9:00 a.m. to 11:30 a.m. Judging will be scheduled by the Extension Office. Site based judging will be scheduled the week prior to fair with a pre-project tour scheduled in the spring.
2. Must be enrolled in Home Environment project.
3. A member may enter only one exhibit per class, except Class H-101. Multiple exhibits can be entered in this class. May enter class H-803 in woodworking.
4. Only articles judged may be included in the exhibit display.
5. Display representative of project required can be set up by Wednesday before noon.
6. An entry card must be attached to the exhibit with safety pin(s), tape or string.

H-101-Single exhibit - An article made by the 4-H member for the home. Include explanation of how it was made, cost, pictures, pattern, etc. Describe how it fits into the color and design scheme of the room. Explanations will be considered in the total score (curtains, draperies, accessories, etc.)

H-102-Poster/Display - demonstrating technique or project phase

H-103-Notebook- may include swatches, colors, stories, photographs and project records which detail what was accomplished this year with a given indication of long-term plans. Notebooks should also include project inspiration, challenges, who helped you, and any other information that could be helpful to the judge. Additional summary is not required for notebook exhibits.

H-104- Design Board. Boards must be on foam core or a standard tri-fold display. Include: color scheme, wall treatment, floor treatment, samples, etc. and/or floor plan for a room. Must include attached summary.4402Notebook. Notebooks may include floor plans, swatches, colors, stories, photographs, and project records which detail what was accomplished this year with a given indication of long-term plans.

H-105-Project display representing tour (required) (No state fair class)

H-106-Tour

Section II - Energy Management including Electricity, Small Engines and Wind Power

Purple/Blue -\$ 1.50; Red - \$1.25; White -\$1.00

Judging on Tuesday as scheduled.

1. Only those who have met the requirements of the electric, small engine or wind energy project are eligible to exhibit in this division.
2. An exhibitor may enter up to three items in this division.
3. **Those enrolled in small engines or wind power should consult with the Extension Office for exhibit rules.**

H-220– Small Engine

H-330– Wind Power

Electricity Rules:

1. For State Fair exhibits, no hand dipped solder may be used on exhibit.
2. Articles that have been in use should be cleaned for exhibit.
3. A sheet of operating instructions must be furnished for any exhibit that is not self-explanatory.
4. Exhibit must be operable. If battery power is required, batteries must be furnished.
5. Any project with a complexity of size or electronics must have (a) instructions for assembly and use, and (b) equipment available at the time of judging for actual testing of the exhibit.
6. Exhibitors will be notified about judging time schedules by the Extension Office.

H-201-Motor application (i.e. toy motor construction, making motor portable)

H-202-Lighting (i.e. movable work bench, portable outdoor light, trouble light, test lamp, lamp conversion, study lamp)

H-203-Wiring (i.e. wiring display board showing wire sizes and types of wire splices; cord and plug repairs, signal system, switchboard)

Section III - Entomology

Purple/Blue - \$3.25; Red -\$2.25; White -\$ 1.25

Youth will be notified of judging schedule by the Extension Office after July 15.

Entomology Rules:

1. A 4-H member may exhibit in the collection and/or educational class for the phase for which they are enrolled.
2. All entries are to be placed in a Plexiglas covered, wooden box with outside measurements of 18x24x31-1/2". See specific phase for box and specimen number limitations. **Check project webpage for additional information.**
3. Each exhibitor is required to identify each box by placing an identification label bearing exhibitor's name and county, and the class. One label goes in the upper left corner of the box (inside) and the other on the lower right corner of the box (outside). Arrange specimens in the box so that it can be displayed lengthwise.
4. The number of orders, specimens (and families, where required) must be included on the exhibitor's box identification label.
5. Emphasis in judging will be placed on the overall variety of Kansas insects represented in the collection, accuracy of identification, skill and technique acquired in mounting of specimens, and overall arrangement and appearance of the collection.
6. For each collection class, two labels will be centered on the pin beneath each specimen. First (closest to the specimen) is the common name label and the second label is the date/locality label.

Educational Exhibits *Educational exhibits are to be displayed in one standard size insect box and identified by use of an identification label as discussed above. It is to include the exhibitor's name, county, and class. Information on numbers and kinds of insects is not needed for educational exhibits. Displays may consist of specialized groups of insects, or relate to any aspect of insect life. Display should be presented in a clear, concise and interesting manner.*

1. Educational classes are limited to one standard box, a maximum of 150 specimens, and work performed during the current year. Title of the exhibit should be indicated inside the box.

2. Purpose of this project is to learn more about the importance, life cycles, biology, ecology, diversity, etc. of insects and related arthropods. Subject matter can be as varied as the insects themselves.

Beginning Entomology I

H-301-Collection - Display in one standard box a minimum of 50 and a maximum of 125 species representing at least 7 orders. Specimens should be grouped according to the order. Order labels should be pinned to the base of the box.

H-302-Beginning Educational Exhibit

Beginning Entomology II

H-303-Collection - Display in one standard box a minimum of 75 and a maximum of 150 species representing at least 9 orders. Follow instructions listed for all collections in rules one through six above.

H-304-Beginning Entomology II Educational Exhibit

Intermediate Entomology

H-305-Collection - Display a minimum of 100 and a maximum of 300 insects representing at least 10 orders. **Check with Extension Office for more details.**

H-306-Intermediate Educational Exhibit

H-307 Butterfly Project Exhibit

H-308 Butterfly Environment Display

Section IV - Geology

Purple/Blue - \$1.50; Red - \$1.25; White -\$1.00

Judging scheduled for Wednesday as scheduled.

Geology Rules:

1. The exhibit box should be 18x24x3-1/2" with Plexiglas cover. All specimens are to be arranged across the narrow (18") dimension of the exhibit box, making the exhibit 18" across the top and 24" deep exactly. Plexiglas cover must be removable from the top. Screws, locks, or other devices that would prevent judges from re-moving Plexiglas cover should not be used.
2. Each exhibitor is required to identify each display box by placing an identification label bearing name, county, and number of specimens in the upper left-hand corner of the Plexiglas cover (inside-use clear double-sided tape to adhere gummed labels), and by attaching a label with the same information on the lower right corner of the box (outside).
3. Geology specimens should be labeled with the number of the specimens, date collected, specimen name or description, locality (county) where collected.
4. Specimens should be mounted in the box by proper groups-rocks, minerals, fossils.
5. All specimens must be collected from locations in Kansas. Out of state specimens will not count in the minimum number for the class, nor will they be considered in the judging.

H-401-Display at least 15 rocks, minerals, and fossils collected during the current 4-H year. Limited to one exhibit box with Plexiglas cover. Fossils must be identified to the Phylum level.

H-402-Display at least 30 rocks, minerals, and fossils, at least 5 of each. 15 must be collected during the current 4-H year. Limited to exhibit box with Plexiglas cover. This class is open to those exhibiting either first or second time at fair. Fossils must be identified to the Phylum level.

Section V - Photography

Jr. Superintendent:

Purple/Blue - \$3.75; Red - \$3.25; White -\$ 2.75

Judging will be in the afternoon of Monday as scheduled.

Special Awards:

Dennis & Judy Smith sponsor award to the Photography Champion.

Edith Lewman, in memory of Robert Lewman, sponsor an award for Reserve Champion in Photography.

A variety of exhibits shall be selected to be exhibited in the Sister Helen Art Show held at Muchnic Art Gallery in Atchison.

Various special recognition awards will be presented in the following classes: Photo Story, Photo Album, Miscellaneous/Creative, 4-H Promotion Photo and Atchison County Proud Photo. Sponsors: Ralph & Rita Madden and other community members/organizations.

Additional Premium: Linda Bottorff, in memory of Carl & Laverne Sternsdorff, sponsors \$10 premium money for photography.

Photography Rules:

1. Photo exhibits will be displayed in archival protectors and not plastic bags. This allows for greater exhibit clarity. Protectors and photo mats will be available for purchase at the Extension Office.
2. Each exhibitor will be judged by consultation. Judging times will be assigned.
3. Exhibitor will be allowed 8 exhibits total (this can be any combination of photos, enlargements or story). Photographs entered must be the result of the current year's project work. Photo images must be taken by the youth exhibitor.
4. Photographic subject matter is expected to follow 4-H standards. For a sense of prohibited subject matter, review the Kansas 4-H member Code of Conduct; in general, if it is not allowable at a 4-H event, it is not allowable in a 4-H photograph fair entry. Photos with live subject(s) on railroad right away or taken from railroad right of way property will not be displayed and will be disqualified and not judged. Copyright protections must be observed. Decisions as to display and/or penalties will be made by the Department Superintendent and Extension Agent.
5. Enlargements must be no larger than 8x10" and no smaller than 7x9" after trimming. Trim all white borders from enlargements before mounting. **Photos are to be mounted on an 11"(top) x 12.5"(side) white matte board** (no foam core board). **Top edge of print must be 1" below the top of the mount. Sides of the photo must be an equal distance from the sides of the mount.** A full coverage permanent mount (spray adhesive recommended or heat mount) must be made. The Kansas 4-H Photography ID Form (available from Extension Office and online) must be used and mounted correctly on the bottom front of the matte board.
6. No lettering including dates is permitted on the mount or on pictures. No underlays or borders are to be used. No contact prints on front of mount. Improperly mounted photos, oversize or undersize photos or photos with the white borders not removed or lettering (including dates) on the photo, will be awarded a ribbon one placing lower than the placing determined by the official judges.
7. The black and white classes are for black and white prints only. Monochromatic prints, including sepia prints are considered color photos and must be entered in the appropriate color photo class
8. Photographs taken with a digital camera and having no more adjustments than exposure, color intensity or correction, one click filter effects, red eye removal, cropping, dodging and burning should be entered in the standard color or black and white classes. HDR photos are to be entered in the standard photo class.
9. A Non-Adjustable Camera has a fixed f-stop and shutter speed. If the f-stop or shutter speed can be changed either manually or automatically, the camera is adjustable. Digital Camera A color/ black and white photo taken with a digital camera and printed without any more enhancement than could be done in a photo darkroom/ lab would be no different than a photo with film. Enter class 501, 502, 511, 512, 522, or 523. Computer enhanced or manipulated photos are those manipulated in the computer beyond that which could be done in the dark-room. These would be entered in class 520 or 531.
10. ****Digital Composite Image** - photo must be created from 2 or more originals taken by the exhibitor. Exhibitor must include an explanation of what manipulation was done and the original photos in standard size print. (Classes H-503, H-513 or H-524)
Consult State Fair rules if selected for exhibition.
11. Photo story exhibits may have 3-5 prints, no smaller than 3x5" (horizontal or vertical) arranged on one white mat board 11"x12.5" tall. Trim all white borders from prints. Small prints may fill the board.
12. **A portfolio photo album of the exhibitor's work done during the current year is strongly encouraged by members with 3 or more years of project experience.** Photos are to be categorized by technique and each photo captioned regarding experience. The purpose of this exhibit is to demonstrate photography technique; i.e. lighting. Portfolio should be limited to 10 pages.

13. Miscellaneous or creative class includes commercially printed canvas prints, posters, t-shirts, fliers and other applications of photography skills. Technique exhibit is to be mounted on an 11" (top) x 12.5" (side) mat board.

* No State Fair Class

4-Her with 3 years or less in photography project

H-501-Color Photo

H-502-Black and White Photo (black & white prints only)

H-503-Digital Composite Image Photo must be created from two or more originals taken by the exhibitor. Exhibitor must include a second 11 x 12-1/2 matte board (Explanation Board) mounted with standard size prints of the original photos, 3 x 5 card(s) explaining what manipulation was done and a standard size print of the final photo. Optional, may include prints of editing steps. Photos showing editing steps may be layered. Please put name and county on the front of the second board. Explanation Boards will be displayed along with the finished board. Place both matte boards in the same protective plastic bag. Note: Check extension office for further details.

H-504-Photo Story* (Special Recognition Awarded)

H-505-Photo Album* (Special Recognition Awarded)

H-506-Miscellaneous/Creative* (Special Recognition Awarded)

H-507-4-H Promotion Photo * (Special Recognition Awarded)

H-508-Atchison County Proud Photo* (Special Recognition Awarded)

4-Her with 4 to 7 years in Photography project

H-511-Color Photo

H-512-Black and White Photo (Black & white print only)

H-513-Digital Composite (See **H-503** for description)

H-514 -Video

H-515-Photo Story*

H-516-Photo Album* (Special Recognition Awarded)

H-517-Miscellaneous/Creative or Theme) * (Special Recognition Awarded)

H-518-4-H Promotion Photo *(Special Recognition Awarded)

H-519-Atchison County Proud Photo (Special Recognition Awarded)

H-520-Computer Manipulated Photo

4-Her with 8 or more years in Photography project

H-522-Color Photo

H-523-Black and White Photo

H-524-Digital Composite (See **H-503** for description)

H-525 -Video

H-526-Photo Story* (Special Recognition Awarded)

H-527-Photo Album* (Special Recognition Awarded)

H-528-Miscellaneous/Creative* or theme * (Special Recognition Awarded)

H-529-4-H Promotion Photo (Special Recognition)

H-530-Atchison County Proud Photo (Special Recognition)

H-531-Computer Manipulated Photo

Photography Portfolio (5 or more years in project) *KSF Class*

H-532 Portfolio Classes –Growth Portfolio

- A) Member must have been enrolled in Photography project for five (5) years or more. B) Exhibit will consist of 5 (five) photos - one from each of the past 5 years of enrollment. Each photo must have been created in a different year and must be
B) labeled with year taken and which year of enrollment it represents. C) Photos must be 8” x 10” and may be color or black and white. D) An information sheet must accompany each photo giving brand and model of camera used to create the photo. The settings for focal length, aperture, mode and shutter speed must also be listed. E) Skill set used to create the photo must be given and explained. Main goal for each year should be listed. F) Beginning with photo 2, member description of GROWTH in project skill must be included on information sheet. G) Exhibit will consist of photos arranged in chronological order of enrollment, information sheet on each photo, and all information listed in #6 and #7. A portfolio book will be required. Check with extension office for more details.

H-533 –Career Portfolio

- A) Member must have been enrolled in Photography for 5 (five) or more years OR member must be age 15 -19 and been enrolled in photography for at least two (2) years. B) Exhibit will consist of ten (10) 8 x 10 photos showing skill development in one of the following photography areas: Portraiture, Special Effects (not done with computer), Landscape, Photo Journalism, Black and White, Nature/Wildlife or Graphic Design (computer skills with photos). Photos may have been created over multiple project years. C) Photos may be color except if Black and White option is chosen. D) An information sheet must accompany each photo giving brand and model of camera used to create the photo. The settings for focal length, aperture, mode and shutter speed must also be listed. E) A one-page summary should accompany the portfolio listing the goal for pursuing this area of photography and what skills were learned while doing so. Mentors should be acknowledged. Career exploration can also be described. F) Exhibit will be presented in a notebook designed for portfolio review with pages for required information from **D** and **E**. NOTE: A member may enter only one portfolio each year. Portfolio must have qualified at the County/District Level.

Section VI - STEAM–SPACETEACH

Includes Astronomy, Computer Systems, Robotics, Rocketry, & Unmanned Aerial Systems

Purple/Blue - \$1.50; Red - \$1.25; White -\$1.00

Assistant Superintendent: Aaron Weaver

Jr. Superintendent: Connor Weaver, Noah Weaver

Includes Astronomy, Computer Systems, Robotics, Rocketry, & Unmanned Aerial Systems

Purple/Blue - \$1.50; Red - \$1.25; White -\$1.00

Judged Tuesday (afternoon) as scheduled.

Section Guidelines:

Use current year forms. Forms from previous years SHOULD NOT be used.

Educational displays in this section are limited to one 2’ x 3’ tri-fold display board and no more than 3’ x 3’ of table space. Care should be taken to use durable materials that will withstand fair conditions. No electricity will be provided

ASTRONOMY

STEAM-Astronomy rules:

1. Youth must be currently enrolled in the project to exhibit.
2. Each exhibitor may enter one exhibit per class. Exhibit must have been completed during the current year.
3. Telescopes entered in this division may be built from a kit or by original design. Pre-finished telescopes, which require no construction or painting are not acceptable exhibits.
4. Telescopes are limited to no more than six feet in length.
5. Each exhibit must include a “4-H Astronomy Exhibit Information Form,” which should be attached to the outside of a 10” x 13” manila envelope.
6. For **complete listing of rules**, check with **Extension Agents**.

H-501-Telescope made from kit

H-502-Telescope made from original design

H-503-Poster

H-504-Notebook

H-505-Project Educational Display

COMPUTER SYSTEMS

STEAM-Computer Systems rules:

1. The computer project teaches concepts related to computers, hardware knowledge, software programming and applications, internet safety, the building, maintenance and repair of computers and future career opportunities. Please note that the actual construction of computer hardware (i.e., building a computer, electronic devices with a mother-board based manipulation) will remain in the Energy Management division. 2. Youth must be currently enrolled in the project to exhibit in this division. 3. Each exhibitor may enter one exhibit per class. Exhibit must have been completed during the current 4-H year. **4. For a complete set of project exhibit rules, contact Atchison County Extension Office.**

H-511-Single computer system (web server, database server, etc.)

H-512-Networked system consisting of two or more computers

H-513-Chip system -a small (8"X8"X8") programmed physical device that accomplishes a specific task

H-514-Poster

H-515-Notebook

H-516-Project Educational Display

ROBOTICS

STEAM-Robotics rules:

1. Youth must be currently enrolled in the Robotics project to exhibit. 2. Each exhibitor may enter one robot per class. Exhibit must have been constructed and/or completed during the current 4-H year. 3. Each robot must be free-standing, without the need for additional supports in order to be moved or exhibited. Each exhibit must include a robot, information packets are not a sufficient exhibit. 4. Robots must have automated articulated structures (arms, wheels, grippers, etc.). Game consoles that display on a screen are not considered robots and should either be entered in computer system division or energy management project. Robots requiring no assembly, just programming, such as Ozobots, are considered computer system projects as the skill is focused on the programming not on the construction of the robot. **5. For a complete set of project rules, contact the Extension Office.**

H-521-Robot made from a commercial (purchased) kit. (No Programming just assembly)

H-522-Robot designed by exhibitor. The robot must not be a mere modification of an existing robot kit or plan.

H-523-Programmable robot made from a commercial (purchased) kit.

H-524-Robot designed and constructed by exhibitor or from a commercial kit, that is operated by a remote-controlled device.

H-525-Junk Drawer Robotics

H-526-Team Robotics (2 or more youth-Check with Extension Office for guidelines.)

H-527-Poster

H-528-Notebook

H-529-Project Educational Display

ROCKETRY

Special Awards: Linda & John Funk, sponsor an award for Top Rocket Display/Exhibit.

Spielman Fertilizer, sponsor \$25 additional premium money for Rocketry.

STEAM-Rocketry rules:

1. Must be currently enrolled in the Rocketry program to exhibit.
2. All rockets displayed in this division must be constructed during the current year.
- 3. If a rocket qualified for the Kansas State Fair, exhibitors should read the State Fair rules for the Rocketry division as they may be different from those at the county fair.**
4. Each exhibitor may enter up to two rocket exhibits that have been constructed during the current year. If two rockets are entered, one rocket must be a "model rocket kit", or the second may be entered into any other applicable class. An exhibitor may not enter two rockets in the same class.
5. 4-Hers are to complete and sign the rocketry information form, available from www.STEM4KS.com or the Extension Office, and attach it to a 10"X13" "manila" envelope. The envelope should contain: A) Construction Instructions B) Up to 5 pages of pictures (construction & launch) C) Documentation of any flight damage D) Any modifications made to the rocket E) An additional page for altitude calculations if the space on the form is not enough. F) **Additionally, for original design**

rockets (scratch built) Up to 5 additional pages of photos + Documentation of how the rocket was tested for stability.

6. If a safety violation is noted by the judges, superintendent, or extension staff, the exhibitor's rocket, at the judges' discretion, will receive a participation ribbon.

7. Rockets are to be displayed upright on a display stand with a sturdy rod that does not extend past the top of the rocket or stand unassisted, unless the rocket is taller than 4 feet in which case no display stand is required and the rocket may be displayed on its side, rockets are not to be displayed on launch pads to save space and for safety.

8. Rockets **ARE NOT** to be displayed with used or unused rocket engines either in the rocket or as part of the stand. May disqualify exhibit.

9. Rockets should be flown, unless there is an active burn ban in the county or conditions are too dangerous to safely launch the rocket. Just flying the last stage (the part with the nose cone) of a multi-stage rocket is acceptable.

10. All rockets, except those in the JR division, are not to be "beginner kits" or use prefabricated fin assemblies or pre-finished rockets requiring no painting, these are not acceptable outside the JR division.

11. Angles of fins must fall within a plus or minus 2-degree variation using an approved fin alignment guide (such as KSSTAC10). An official fin guide is available from www.STEM4KS.com.

12. Fins and body tubes, except those in the introductory division, are to be filled and sealed with sanding sealer and/or primer or other suitable filler to eliminate the appearance of body grooves and wood grain.

13. Fins and launch lugs are to be filleted to reduce drag and properly secure them to the model.

14. Engine mounts are to be securely attached to the body tube.

15. Any seams on plastic parts are to be sanded smooth.

16. The recovery system (typically a parachute or streamer) should be attached according to the instructions.

17. The nose cone is to fit snugly but still allow for easy removal.

18. Rocket must be uniformly painted and smoothly finished or finished as per rocket instructions (for example, no painting required), and have decals, if used, are applied smoothly.

19. Models may not be judged based on their paint scheme (colors and placement on the rocket), with the exception of rockets that fit the definition of a **scale model*** and are entered in the scale model class. All other rockets do not have to follow the suggested paint scheme, allowing youth to display maximum creativity in the finishing of their rocket. Under no circumstances is the weight given to the paint scheme to be sufficient enough, by itself, to move the model from one ribbon placing to another.

20. **Scale models*** entered in the scale model class may be judged based on their paint scheme. The judge may deduct up to one ribbon placing for not following the paint scheme. Rockets displayed in the scale model class are to be finished and completed with a majority (greater than 70%) of decals. For all other rockets the use of decals are optional.

21. Original design rockets cannot be a modification of a pre-existing kit and must be of original design.

22. Original design rockets must be designed by the exhibitor.

23. Exhibitor must be 11 years of age (4-H age) or older to enter an original design rocket.

24. Original design rockets must include detailed instructions, so that someone could construct the original designed rocket just like a purchased kit. No page limit to convey full and complete construction techniques.

25. For rocket entered in the **original design classes**, describe in the summary how the rocket was tested for stability prior to flying. Swing testing of the rocket is required. Other tests and calculations are encouraged. Exhibitors must include documentation of the swing test.

26. Failure to swing test a rocket will result in a deduction of TWO ribbon placings.

27. A minimum of one additional page must be added to the rocketry information pack detailing the test(s) performed to insure stability. 4-Her's are strongly encouraged to provide as much detail as possible. Failure to provide adequate written documentation will result in a disqualification.

28. Rockets that use more than one 'D' engine or equivalent are considered mid or high-power rockets.

29. Mid and High-Power exhibitors must be at least 14 years of age by January 1 of the current year.

30. In addition to the information packet completed for all rockets, a high-power information form is to be completed and placed inside of the information packet. This may be downloaded from www.STEM4KS.com

31. Exhibitors in the mid and high-power divisions must hold memberships in either NAR or Tripoli organizations.

32. The NAR High Power Rocket Safety Code applies to the construction and launching of all rockets displayed in this division. As such all mid and high-power rocketry exhibitors must comply with the NAR High Power Rocket Safety Code that is in effect as of October 1st of the current 4-H year.

33. All rockets in the mid and high-power divisions are to be launched under adult supervision by the 4-H member who constructed the rocket.

34. For rockets launched using an engine(s) that have 160.1 ('H' engine or equivalent amount of smaller engines) Newton's-seconds or larger, adult supervision must be provided by an individual having at least a level 1 high power certification. The member should also hold or be attempting to attain their level 1 high power certification if launching on this large of an engine.

*As defined by the National Association of Rocketry (NAR), a scale model is "any model rocket that is a true scale model of an existing or historical guided missile, rocket vehicle, or space vehicle." The intent of scale modeling is, according to the NAR, "to produce an accurate flying replica of a real rocket vehicle that exhibits maximum craftsmanship in construction, finish, and flight performance." (NAR "Pink Book" 50.1 4-1)

All Ages

H-530– Rocketry Poster

H-531– Rocketry Notebook

H-532– Rocketry Project Educational Display

Beginner -Exhibitors 7 and 8 years old

H-533– Rocket made from kit, without pre-assembled fin units. Include plans.

H-534– Rocket made from “beginners kit.” Include plans. Rockets in this class may have pre-assembled fin units. (This class is for first and second year 4-H members to explore the rocketry project.)

H-535– Scale Model Rocket made from kit. Include plans.

Junior -Exhibitors 9 through 13 years old

H-536– Rocket made from kit. Include plans.

H-537– Scale Model Rocket made from kit. Include plans.

Exhibitors 11 through 13 years old (9-10-year olds may not enter classes below.)

H-538– Rocket designed by exhibitor: not merely a modification of an existing kit. Include original plans.

H-539– Scale Model Rocket designed by exhibitor: not merely a modification of an existing kit. Include original plans and stability testing.

Senior -Exhibitors 14 years and older

H-540– Rocket made from kit. Include plans.

H-541– Rocket designed by exhibitor: not merely a modification of an existing kit. Include original plans.

H-542– Scale Model Rocket made from kit. Include plans.

H-543– Scale Model Rocket designed by exhibitor; not merely a modification of an existing kit. Include original plans and stability testing.

Team -Exhibitors 11 years and older

This class is designed to encourage teamwork among individuals and clubs to work on a rocket from the initial design to the finished product.

H-544– Rocket designed by 2 or more exhibitors: not merely a modification of an existing kit. Include original plans.

Team-Exhibitors 14 years and older

H-545– Mid or high-power rocket made from kit or original design

STEAM-Unmanned Aerial Systems

STEAM-Unmanned Aerial System rules:

Purpose: *The 4-H unmanned aerial system (UAS) project explores the world from above the trees and discovers new frontiers with UASs. UASs are commonly known as Unmanned Aerial Vehicles (UAVs) or drones. Members explore the uses and applications of unmanned aerial system including how UASs link to other projects such as geology, robotics, electronics, crop science and many more.*

1. Youth must be currently enrolled in the project to exhibit.
2. Each exhibitor may enter one exhibit per class. Exhibit must have been completed during the current 4-H year.
3. The required information that accompanies the UAS must be limited to the **4-H SPACETECH STEM Exhibit Information Form** which is affixed to a 10” x 13” envelope. This may be downloaded from www.STEM4KS.com. or by contacting the extension office. Any UAS exhibit not including this completed envelope will receive an automatic participation ribbon.
4. Each exhibit **must** include a video of the youth operating their UAS to allow judge to get a better understanding of the exhibit and allows the youth the opportunity to fully demonstrate their exhibit.
5. **Exhibitors in this section, should consult with the Extension Office for complete rules and information.**

H-601-Unmanned Aerial System From Kit May exhibit a UAS that is purchased off the shelf. (First 2 years in project only. Not State Fair eligible.)

H-602-Unmanned Aerial System Remote Operated Device Designed and constructed by exhibitor. Not be a mere modification of an existing kit or plan.

H-603-Practical application of an Unmanned Aerial System constructed from a commercial (purchased) kit. This includes the UAS, plus one or more of the following: video, notebook, poster, display board, etc. This class is separate from educational exhibits. A tangible use would be mapping, eroded soils, bindweed in fields, and many other non-agricultural UAS uses.

H-604-Poster

H-605-Notebook

H-606-Project Educational Display

Section VII - Forestry

Purple/Blue - \$1.50; Red - \$1.25; White -\$0.00

Judging will be Tuesday (afternoon) as scheduled.

Forestry Rules:

1. All leaf exhibits are to be mounted on an 8-1/2x11" heavy stock paper and placed in loose-leaf binders. (Magnetic or adhesive filler sheets for photographic prints are recommended.) Twigs and fruit collections may be exhibited in whatever manner you choose. (Maximum exhibit size 2'x3')
2. Name, club, age, and number of years in this project should be on front cover or in a prominent location.
3. Leaves should be identified with an appropriate label located near the leaf on the same page. These labels should include 1) the proper common name as listed in 4-H Bulletin #334, "List of Native Kansas Forest Trees"; 2) location (city and/or county) where collected; and 3) date (day, month, year) collected.
4. For ideas on mounting, see the Forestry Project booklet.
5. Divide specimens into the following two sections: Native Kansas Trees, and Non-Native Trees.
6. Junior Forester - Exhibit only in phase(s) enrolled. Knowing Trees as Individuals (Leaf Collections**)

H-701-Beginning - Exhibit leaves. Minimum of 10 different native Kansas trees, (or) leaf, twig, and fruit of 5 different native trees. Can include additional non-native specimens in addition to required native Kansas tree specimens.

H-702-Intermediate - Exhibit leaves. Minimum of 20 (Includes at least 10 new in addition to previously exhibited) different native Kansas trees, or leaf, twig and fruit of 10 different trees (includes at least five new in addition to those previously exhibited). Can exhibit non-native in addition to the required native Kansas trees. **Exhibit one complete leaf when possible. When leaf is too large, exhibit as much of the terminal portions as possible. Sketch in reduced scale the entire leaf and illustrate where the exhibited portion comes from.

How a Tree Grows

H-703-Display requires project notebook with 10 or more seeds collected with pictures showing germination study.

Tree Appreciation

H-704-Display requires project notebook of your work.

Section VIII - Woodworking

Jr. Superintendent: Ashton Neill

Purple/Blue - \$6.25; Red - \$5.25; White - \$4.25

Judging will be Tuesday (afternoon) as scheduled.

Special Awards

Meadowlark 4-H Club sponsors an award for Overall Grand Champion and Overall Reserve Grand Champion in Woodworking.

Additional Premium Money

David & Brenda Royer, in memory of Willard & Ruby Royer, sponsors \$15 premium money for Woodworking.

Spielman Fertilizer, sponsors \$25 premium money for Woodworking.

Gary Wilson family, in memory of Mary Lou Wilson, sponsor \$15 premium money for Woodworking.

Woodworking Rules:

1. Any 4-H member enrolled in the 4-H woodworking project may enter an exhibit. 4-Hers enrolled in home environment may exhibit in class
2. Entries can be entered on Monday and will be judged Tuesday afternoon.
3. The plan from which exhibit was constructed must be with the article exhibited. The plan may be a photocopy, the actual pattern, or a scale drawing. If you draw your own plan, a scale of one-half inch equals one foot is suggested. Plan must be complete and accurate to the extent that a duplicate article could be built using the plan as a guide.
4. Any project with missing or insufficient plans will be lowered a ribbon placing (i.e. a blue-ribbon project will receive a red ribbon)
5. The Woodworking Department will be divided into two divisions: Junior (12 and under) and Senior (13 and over).
6. An exhibitor may exhibit no more than three articles in this department and no more than 1 article per class.

H-801-Woodworking articles for farm/shop

H-802-Lawn furniture

H-803-Household furniture

H-804-Other woodwork articles not included in above classes (i.e. bird feeders, bird houses, knife racks, bread boards, doorstops, etc.

H-805-Piece of repaired or refinished furniture (woodworking or home improvement projects only.)

H-806-Any article made from a kit.

H-807-Hand tooled item only

Section IX - Posters

Premium money for all posters except Reading & Leadership: Purple/Blue - 2.25; Red - 1.75; White- 1.50

Premium Money for Reading Posters: Purple/Blue - 3.00; Red - 2.50; White - 2.25

Premium Money for Leadership Posters: Purple/Blue - 2.50; Red - 2.10; White - 1.75

Jr. Superintendents: Emily Wood Avery Handke

Special Awards: Karl Gfeller, in memory of Yasu Gfeller, sponsors an award for Champion Leadership Poster.

Karl Gfeller, in memory of Yasu Gfeller, sponsors an award for Champion Citizenship Poster.

Farmerettes FCE, sponsors \$25 additional premium money for posters that encourages Reading.

Judging will be Monday, August 1.

Poster Rules:

1. Posters should be 22" x14". Note: Youth also create an educational project display or project notebook which showcases project skill development. Check with extension Office for details.
2. Posters may be displayed in all enrolled projects.
3. Posters must be entered from 9:00 to 11:00 on Monday. Check-in with department superintendent.
4. To encourage project learning, 4-Hers are encouraged to participate in conference judging.
5. Pet project poster/exhibit (R-105) are displayed in this division but will be judged at the Pet Show on Friday.

H-901-Citizenship

H-902-Financial Champions

H-903-Leadership

H-04-Reading

H-905-Safety

H-906- Fishing

H-907-Wildlife

H-908-Self-Determined

H-909-Miscellaneous (Any other project not listed such as Bicycle)

R-105– Hand Pet Educational Exhibit/Poster

Section XI - Other Projects

Purple/Blue - \$1.50; Red - \$1.25; White - \$1.00

1. 4-H member is encouraged to enter projects not included else-where in the fair book. Follow instructions of the project material. Contact the Extension Office for assistance and judging details.

2. Depending on project enrollment, youth may enter more than 1 entry in classes H1101, H-1105, H-1109.

3. Exhibitors must comply with state and federal laws. It is illegal to possess threatened or endangered wildlife, or the feathers, nests, or eggs of non-game birds. Game birds and game animals taken legally during an open season may be used. Tags are required. The use of live wild animals in educational exhibits is prohibited.

H-1101-Self- Determined

H-1102-Financial Champion Notebook

H-1103-Financial Champion Display

H-1104- Fishing Notebook

H-1105- Fishing Display

H-1106-Wildlife Notebook

H-1107-Wildlife Display

H-1108-Wildlife Taxidermy/Tanning Exhibit - Must include photo/ detailed journal or process

H-1109-Any Other Project Exhibit/Display/Notebook

Section XII - Leadership

1. 4-Hers enrolled in Leadership may develop and carry out a leadership project plan. Following completion, create a portfolio including outline, pictures, 2 letters of reference from adult mentors and any supporting documents.

2. 4-Her will consult with judge regarding plan in August. A schedule will be sent to 4-Hers submitting a plan.

H-1201-Leadership project

Section XIII-Place Setting

Superintendent: Brenda Hoobler

Purple/Blue - \$6.00; Red - \$5.00; White - \$4.00

Judged on Tuesday, August 2 as scheduled.

Special Awards

Rick & Debbie Clement, sponsor premium money and awards for Place Setting.

1. Any youth may participate in the place setting division. If entries merit, this dividing will be split in a junior and senior age group for judging purposes. Each group shall have five or more entries to merit having a junior and senior division. It is suggested that youth planning to participate notify the extension office prior to July 15 so a judging time might be scheduled

2. Entries in this division will be judged on Tuesday, August 2. Check-in with foods superintendent for judging instruction.

3. An exhibit will include appropriate appointments (ie. tablecloth, centerpiece and the cover setting for one person) to carry out menu theme. A cover setting consists placemat, napkin, dinnerware, flatware and glassware. The planned menu and the occasion of meal is served are displayed to complete the exhibit. Menu planned by the youth will determine the appropriate cover setting choices. Place setting guidelines may be viewed at www.atchison.k-state.edu/4-h/projects/placesetting.html.

4. A theme for the place setting is encouraged to demonstrate creativity. All food contact surfaces must be considered food safe. For example, it would not be appropriate to spray paint a plate to carry out a color scheme. It would be acceptable to paint a charger to carry out theme color and then select a clear plate on which to serve the foods. Dishes and other items may be borrowed; paper plates may be used if suitable for menu selection.
5. Youth will set the place setting during the judging consultation period. Older youth are encouraged to make an oral presentation while setting the cover setting. Youth dress should be appropriate for theme established. Presentation will be made on 8 foot table. Youth may provide their own table if more suitable for menu choice.
6. Place setting exhibits will be displayed during fair. Items may be left stored in a container for resetting during fair week. Exhibits may be taken home if exhibitors prefer not to risk breakage due to accidents following judging. All place settings should be reset for public display prior to noon Tuesday, August 2.
7. Judging criteria includes **place setting appropriate for selected menu-10%; overall menu appeal 10%; menu display/occasion-10%; correct placement of cover setting-20%, centerpiece selection-10%, theme creativity/visual appeal-20%, food safety considered-5%; and age-appropriate youth knowledge /presentation-15%.**

H1301- Place Setting

Section XIV–STEAM

Superintendent: Wanda Small

Purple/Blue - \$3.00; Red-\$2.00; White-\$1.00

Rules:

1. The purpose of STEAM is to learn about Science, Technology, Engineering, Agriculture/Art and Math. This department is open to all youth who participated in 4-H related STEAM classes, activities or camps during the current year (September-August)
2. Youth may enter one exhibit in each category. Entries should be checked in on Monday from 6:00 -7:30 p.m. in the Blue Building or Wednesday from 9:00-11:00 a.m. Youth will visit about their exhibit with a 4-H friend to receive project feedback. STEAM focused talks are scheduled from 11:00-noon.
3. Ribbons will be awarded to each exhibit following the Danish judging system.
4. STEAM focused youth activities are scheduled from 11:00-2:00 in the Blue Building.
5. Exhibits will be on display in the Blue Building until Saturday, Exhibits will be released at 7:00 p.m. Saturday.
4. Consult the Extension Office or STEAM instructor for additional information.

Earth Science

- H1401-** Poster
- H1402-** Talk
- H1403-** STEAM Item
- H1404-** My Home STEAM Project
- H1405-** Miscellaneous

Livestock

- H1410-** Poster
- H1411-**Talk
- H1412-**STEAM Item
- H1413-**My Home STEAM Project
- H1414-**Miscellaneous

Food/Nutrition/Health

- H1420-**Poster
- H1421-**Talk
- H1422-**STEAM Item
- H1423-**My Home STEAM Project
- H1424-**Miscellaneous

Art

- H1435-**Poster
- H1436-**Talk

H1437-STEAM Item
H1438-My Home STEAM Project
H1439-Miscellaneous

Other

H1445-Poster
H1446-Talk
H1447-STEAM Item
H1448-My Home STEAM Project
H1449-Miscellaneous

Section XV-STEAM-Ag Mechanics

Superintendent:

Special Awards:

The Ag Mechanics exhibit area is STEM project with an emphasis on welding and smithing, it will expand as the project area grows. This project allows youth to explore areas of ag mechanics and metallurgy from repairing or repurposing items to the fabrication of new items. The intent is for this program start with foundational areas, some of which youth may already have, and allow them to continue to build on this knowledge becoming more experienced.

- 1.Enrollment requirement for 4-H'ers: STEM-Ag Mechanics Class open youth enrolled in FFA and Scouts.
- 2.Each exhibitor may enter one exhibit per class. Exhibits must have been constructed or repaired during the current 4-H year. Purple ribbon exhibits have an opportunity to showcase at Kansas State Fair.
- 3.Total exhibit dimensions should not exceed 3 feet high, by 3 feet wide, by 3 feet deep. Total exhibit weight may not exceed 150 pounds (movable by a team of 2 people)
- 4.Wheeled exhibits must utilize a braking mechanism which prevents the exhibit from freely rolling while on display
- 5.Each exhibit must be free-standing or sufficiently supported by an exhibitor supplied support system that is moveable and is part of the total demission's and weight of the exhibit as described previously. Exhibit boards should have a portable and moveable base. No exhibits may be staked to the ground for display.
- 6.Top heavy items should be braced or placed in a stand sufficient to prevent it from toppling over while on display
- 7.Exhibits may not be bound, affixed, attached to the State Fair buildings, except by the superintendent or Extension Staff.
- 8.Painting or spot painting is not allowed on projects after arrival on fairgrounds. If wet paint is detected by judges or superintendents one ribbon placing will be deducted.
- 9.Repair projects having adequate original finish need not be repainted
- 10.Cutting surfaces, such as blades or knives, are to have a protective covering over them to prevent injury. If easy to remove for judging, foam "pool noodles" and multiple layers of cardboard are acceptable.
- 11.Exhibits that include weaponry of any kind will be disqualified. Weaponry is defined as any instrument, possession, or creation, physical and/or electrical that is intended to be used to inflict damage and/or harm to individuals, animal life, and/or property.
12. Safety precaution should be taken If the exhibit is powered by flammable liquids or electric power. If a safety violation is noted by the judges, superintendent, or other staff, the exhibitor's exhibit, at the judges' discretion, will receive a deduction in ribbon placement or a participation ribbon
- 13.Each exhibit must include an Ag Mechanics information packet. Exhibitor required to complete the "4-H STEM Ag Mechanics Exhibit Information Form" which is available from Extension Office or at www.STEM4KS.com. Packet should include the following items: A). Bill of materials for the project with associated costs, B) 1 to 5 pages of photos showing work on the exhibit, preferably from a beginning state to final or completed state, C) If appropriate schematics or working drawings relating to the creation/ repair D) If appropriate operating instructions This form must be attached to the outside of a 10" x 13" manila envelope.

14. Additionally, exhibitors may create an optional video (not required) about their project showing its operation and the work they have done. The video should be no longer than 8 minutes and should be placed on a USB drive. Adult guardians must complete the video release included with the exhibit form.

15. Exhibitor divisions will be Level I– Introductory (1-3 years’ experience), Level 2-Experienced (4-6 years’ experience), Level 3– Advanced (7-9 years’ experience) and Level 4-Master (10+ years’ experience). Check with Extension Office for additional information regarding fair entry and project details. List experience level on entry card.

H1-501-Welding Repair

H1-502-Welding Fabrication

H1-503-Brazing Repair

H1-504-Brazing Fabrication

H1-505-Smithing

H1-506-Other

Section XVI- STEAM Architectural Block Construction

Superintendent:

Special Awards: Karen Bell sponsors an award for this project.

The STEM ABC exhibit has an emphasis on using architectural blocks (“Legos”) to construct dioramas. This project allows youth to explore architectural design in a three-dimensional space. The intent is for this program start with foundational ideas of architecture, some of which youth may already have, and allow youth to continue to build on this knowledge becoming more and more experienced.

1. Enrollment requirement for 4-H’ers: STEM-Architectural Block Construction. Entry open to other youth organization including Scouts and FFA.
2. Each exhibitor may enter one exhibit for this department. Exhibits must have been constructed or repaired during the current 4-H year. Kansas State Fair allows four exhibits from this department for our county.
3. Total exhibit dimensions may not exceed 2 feet high, by 2 feet wide, by 2 feet deep.
4. All exhibits should be placed in a sturdy see through enclosure with a top, bottom, and 4 sides. A fish tank would be an acceptable enclosure. This is to keep exhibit parts from being “scattered to parts unknown” at the fair. The outer dimensions of the enclosure are part of the total exhibit dimensions.
5. All components used in construction should be dust free, clean, free of chips, scuffs, or cracks
6. The primary building component should be interlocking blocks, commonly referred to by the brand name of Lego®
7. Other architectural components can be integrated into dioramas to illustrate architectural aspects that may be difficult to convey with traditional interlocking blocks
8. The use of existing “store bought” sets for major architectural elements of the display is not allowed, use of figurines from sets is allowed as are using individual bricks to create something different than the architectural component of the set it came from.
9. Displays must have significant architectural components (walls, windows, doors, roofs, canopies flying buttresses, etc.), landscapes are discouraged.
10. Architectural elements should have a consistent look, walls with no pattern or consistency will be deducted one ribbon placing
11. Gaps or cracks should not be visible between assembled blocks.
12. Doors should open and close, windows can be either fixed or open and close.

13. Vehicles that are intended to stay in a single place should be affixed to base plates with sticky tack, hot glue, or other method.
 14. Reveals that show the inside of a structure are acceptable, such as only having three walls to allow an unobstructed view into a room.
 15. Mechanical enhancements or motion elements that add motion to the diorama are acceptable and encouraged. If used judges should be able to use them and instructions should be provided for operation.
 16. Artistic designs with no architectural design/components are not permitted and two ribbon placings will be deducted.
 17. The exhibitor's name(s) must be placed on the top left of the enclosure.
 18. Each exhibit must include an Architectural Block Construction information packet. Each exhibitor is required to complete the "4-H STEM Architectural Block Construction Exhibit Information Form" which is available from Extension Office or at www.STEM4KS.com. Information packet should include the following items: A) At least one drawing of the desired architecture on graph paper, multiple views (top, front, side) are preferred B) 1 to 5 pages of photos showing work on the exhibit, preferably from a beginning state to final or completed state C) If appropriate operating instructions for mechanical portions of the diorama. This form must be attached to the outside of a 10" x 13" manila envelope.
 19. Additionally, exhibitors are required to create a video about their project discussing their construction experiences and the architectural elements of the diorama. This allows judges to get a better understanding of the exhibit and allows youth the opportunity to fully explain their exhibit. The video should be no longer than 8 minutes and should be placed on a USB drive. These videos may also be considered for inclusion in a running video loop in the STEM area at the state fair after review by judges, superintendent(s), and extension staff. Adult guardians must complete the video release included with the exhibit form. (Not required for the 2022 Atchison County Fair)
 20. Exhibitor divisions will be Level I– Introductory (1-3 years' experience), Level 2-Experienced (4-6 years' experience), Level 3– Advanced (7-9 years' experience) and Level 4-Master (10+ years' experience). Check with Extension Office for additional information regarding fair entry and project details. List experience level on entry card.
- H1-601** Level 1 -Diorama illustrating at least 2 architectural features beyond floors, ceilings, and walls
- H1-602** Level 2 -Diorama illustrating at least 4 architectural features beyond floors, ceilings, and walls, and includes 1 or more motion elements
- H1-603** Level 3 -Diorama illustrating at least 6 architectural features beyond floors, ceilings, and walls, and includes 2 or more motion elements
- H1-604** Level 4 -Diorama illustrating at least 8 architectural features beyond floors, ceilings, and walls, and includes 3 or more motion elements