**Department H**

Home Environment; Electricity; Entomology; Geology; Photography; Spacetech; Forestry; Woodworking; Posters; Other Projects; Leadership; STEAM; Place Setting

Superintendents: Department H-Janice Reiss
Assistant Superintendent: Jim Cormode, Wanda Small

**Special Awards:**

Section I - Home Environment
Purple/Blue - $3.50; Red - $3.00; White - $1.75

**Special Awards:**

Home Environment Rules:
1. Enter project exhibits Tuesday from 9:00 a.m. to 11:00 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. May enter class H-803 in woodworking.
4. Only articles judged may be included in the exhibit.
5. Display representative of project required can be set up by Tuesday 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, pat-ttern, 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 record which detail what was accomplished this year with a given indication of long-term plans.

H-104-Project display representing tour (required) (No state fair class)

H-105-Tour

Section II - Electricity
Purple/Blue - $1.50; Red - $1.25; White - $1.00

**Special Awards:**

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

**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 com-mon 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 education-al 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.

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 I**

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**

**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**

**Purple/Blue - $3.75; Red - $3.25; White - $1.00**

**Special Awards:**

**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 on Friday, August 2. 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. Photos taken at railroad museums or railroad parks are allowable.
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 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. 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.
8. 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 with-out 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.
9. **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.**
SEE STATE FAIR RULES FOR FURTHER RULE IF SELECTED FOR STATE FAIR (classes H503 or H513)

10. 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.

11. 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. Portfolio should be limited to 10 pages.

12. Miscellaneous or creative class includes commercially printed canvas prints, posters, t-shirts and other applications of photography skills. Technique exhibit is to be mounted on an 11” (top) x 12.5” (side) mat board. The purpose of this exhibit is to demonstrate photography technique; i.e. lighting. Small prints may fill the 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
H-503-Digital Composite **
H-504-Photo Story *
H-505-Photo Album *
H-506-Miscellaneous/Creative *
H-507-4-H Promotion Photo
H-508-Atchison County Proud Photo

4-Her with 4 to 6 years in Photography project
H-511-Color Photo
H-512-Black and White Photo
H-513-Digital Composite **
H-514 -Video
H-515-Photo Story *
H-516-Photo Album *
H-517-Miscellaneous/Creative* or theme)*
H-518-4-H Promotion Photo
H-519-Atchison County Proud Photo
H-520-Computer Manipulated Photo

4-Her with 7 or more years in Photography project
H-522-Color Photo
H-523-Black and White Photo
H-524-Digital Composite**
H-525 -Video
H-526-Photo Story *
H-527-Photo Album *
H-528-Miscellaneous/Creative* or theme)*
H-529-4-H Promotion Photo
H-530-Atchison County Proud Photo
H-531-Computer Manipulated Photo

Section VI - Spacetech /Rocketry

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

Special Awards:

Rocketry Rules:

1. Each exhibitor may enter one rocket per class. Rocket support base limited to 8” square. Launch pads are not acceptable. Each rocket must be able to stand freely by itself or be supported on a wooden base, not to exceed 3x4x8” square. Wooden or metal support rods must not extend past the tip of the nose cone. To qualify for the state fair, the rocket must have been flown. **Exhibitors should consult the Atchison County 4H Rocket Project webpage regarding details for specific construction and rules, www.atchison.k-state.edu/4-h/projects/spacetech.html.** If a fire burn ban is in effect in Atchison County, exhibitors are not required to launch their rocket(s).

2. Follow rules and safety of National Association of Rocketry. All NAR documents, with the exception of the “pink book,” referenced herein can be found at http://www.nar.org. Tripoli refers to the Tripoli Rocketry Association and governing board.

3. The report that accompanies the rocket must be limited to the 4-H Rocket Information Form which is glued to a 10x13” envelope (copy available at the Extension Office).

4. A copy of plans must be placed inside the envelope. Photographs are also required with the exhibit. Place one 8-1/2x11” page of photographs, only one side covered, inside the envelope. Photographs of the rocket during construction and at the launch site are required. (excluded when burn ban is in effect) Do NOT include photos of 4Hers catching their rockets as they return to earth, this is an unsafe practice and 4H does not recommend nor condone this practice.

5. For original design rockets, describe in summary how model was tested for stability prior to flying.

6. Angles of the fins must fit a plus or minus two-degree variation.

7. Exhibit must be smooth and uniform.

8. Engines and igniter are not permitted with the exhibit.

9. Beginner kits with prefabricated plastic fin assemblies and prefinished rockets requiring no painting are not acceptable.

Rocket Made From A Kit (Include plans)
H-601-Exhibitors 7 through 13 years old
H-602-Exhibitors 14 and older

Rocket Made from Original Materials (Include original plans)
H-603-Exhibitors 7 through 13 years old
H-604-Exhibitors 14 and older

Robotics

1. 4-H member must be currently enrolled in the robotics project to exhibit and project must have been constructed and/or completed during the current 4-H year.

2. Each robot must be free-standing, without the need for additional supports in order to be moved or exhibited. Robots must have automated reticulated structures (arms, wheels, grippers, etc.). Game consoles that display on a screen are not considered robots and should either be entered in computer systems division or energy.
management project. Robots requiring no assembly, just programming, such as Ozobots, are considered computer systems projects as the skill is focused on the programming not on the construction of the robot.

3. All electric components of the robot must be adequately covered or concealed with a protective enclosure. Paper is NOT considered an adequate enclosure or covering for electrical components.

4. Robots must be powered by an electrical, battery, water, or solar source only. Robots powered by fossil fuels/flammable liquids will be disqualified. All robots must include an on/off switch for operation. No remote control devices will be allowed for state fair exhibits.

5. Each robot must be in operable working condition. The judges will operate each robot to evaluate its workmanship and its ability to complete the required tasks for this current 4-H year. In the event the robot uses a phone, tablet, or similar device for programming AND control of the robot a video will be used to evaluate the working condition of the robot.

6. In the event that the robot uses a device like a phone, iPad, or tablet for programming AND operation, DO NOT include the device (phone, tablet, etc.). The device’s safety cannot be ensured. Instead record a video demonstrating the instructions included for your robot. It should show, setting up the robot, starting the robot, the robot executing its task, and powering off the robot, just like the instructions are written.

7. Each exhibitor should complete the “4-H SpaceTech Robotics Exhibit Information Form” available on Extension web site.

8. Robot dimensions should not exceed 2 feet high, by 2 feet wide, by 2 feet deep. Weight may not exceed 15 pounds. If displayed in a case (not required or encouraged) the outside case dimensions may not be more than 26 inches in height, width, or depth.

9. Materials including but not limited to obstacles, spare batteries, and mats for testing the robot may be placed in a separate container, which is not included in the robots dimensions, that container may not be larger than 576 cubic inches as measured along the outside of the container. (Examples: 4"X4"X36" or 4"X8"X18" or 6"X6"X16") The container, if used, and/or any large objects (such as mats or obstacles) should be labeled with the exhibitors name(s) and county or district. The exhibit must include written instructions for operation (the instructions should be written as if they were to tell a grandparent or elderly person how to operate the robot), construction plans, one to three pages of project photographs. A 5 minute video presentation placed on a CD, DVD, USB drive, or similar removable storage device, if applicable. For robots that can be programmed, robot programming information must be included This information should be placed inside the 10” x 13” manila envelope mentioned above. The exhibitor may enter their electronic project listed under the electric program as under the SpaceTech robotics project if the exhibitor so chooses. No exhibitor will be allowed to set up their robot in person.

10. Robots that include weaponry of any kind will be disqualified.

11. Creativity, workmanship, and functionality will be strong criteria in judging the “Robot designed by Exhibitor” class. All robots should have a purpose or intended function, examples include, but are not limited to: following a line, sweeping the floor, solving a rubix cube, sorting colors, or climbing stairs.

12. Educational displays are limited to one 2’ x 3’ tri-fold display board and no more than 3’ x 3’ x 6’ of table space. Care should be taken to use durable materials that will withstand fair conditions. No electricity will be provided.

13. Team project notebooks must be organized in a 3-ring binder and should highlight information/roles of each team member, drawings, charts, photographs, goals and objectives of your robotics project, and all robotic competitions your team has competed in during the current 4-H year.

14. If an exhibit safety violation is noted by the judges, superintendent, extension agents, at the judges’ discretion, will receive a participation ribbon.

Section VII - Forestry

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

Special Awards:

Premium Money:

Woodworking Rules:
1. Any 4-H member enrolled in the 4-H woodworking project may enter an exhibit. 4-Her enrolled in home environment may exhibit in class
2. Entries can be entered on Monday and will be judged at 3:00 p.m
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 woodworking 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

Poster Rules:
1. Posters should be 22” x14”.
2. Posters may be displayed in all enrolled projects.
3. Posters must be entered from 9:00 to 1:00 on Monday.

Special Awards:
H-901-Citizenship
H-902-Financial Champions

Special Awards:
H-903-Leadership

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.

H-1101-Self- Determined
H-1102-Financial Champion Notebook
H-1103-Financial Champion Display
H-1104-Sports Fishing Notebook
H-1105-Sports 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
Purple/Blue - $6.00; Red - $5.00; White - $4.00

Superintendent: Brenda Hoobler
Special Awards: Rick and Debbie Clement provide monies to support place settings.

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 19 so a judging time might be scheduled
2. Entries in this division will be judged on Friday, August 2.
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 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 prefers not to risk breakage due to accidents following judging. All place settings should be reset for public display prior to noon Tuesday, August 6.

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

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

Superintendent: Wanda Small

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 11:00-1:00.

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.