

## Doniphan County Fair Supplemental

DUE TO LACK OF PAST ENTRIES, PLEASE REFER TO DONIPHAN COUNTY FAIR SUPPLEMENTAL, ONLINE RULES & CLASS NUMBERS FOR:

4-H ENGINEERING & TECHNOLOGY DISPLAY RULES  
COMPUTER SCIENCE  
ROBOTICS  
UNCREWED AERIAL SYSTEMS (UAS)  
GEOLOGY  
ENTOMOLOGY

\*All General Fair Rules for 4-H/FFA Entries found on page 9 of Doniphan County Fair Book 2026 are in effect with the Doniphan County Fair Supplemental\*

\*\*Please refer to the Doniphan County 4-H Fair Schedule found on page 5 for entry rules and timings.\*\*

\*\*\*As of 2026 or until enough entries warrant, this will be an online supplemental.\*\*\*

## 4-H Engineering & Technology

Aerospace/Rocketry, Astronomy, Ag Mechanics Welding, Building Block Engineering, Computer Science Posters, Notebooks, and Display Board Rules

1. For notebooks, display boards, and posters, no additional exhibit information is required; no manila envelope is needed for these exhibits. Exhibits are to have a clear link to the Engineering and Technology areas of Aerospace/Rocketry, Astronomy, Ag Mechanics Welding, Building Block Engineering, Computer Science, Electric and Renewable Energy, Robotics, Small Engines, UAS.
2. Exhibits in posters, notebooks and display boards must contain substantial supporting educational materials.
3. Educational display boards, posters and notebooks should be creative and showcase details about the knowledge learned in the project during the current 4-H year. Value is placed on youth who can demonstrate how their skills have increased while completing the project. Each exhibit will be judged on uniqueness, creativity, neatness, accuracy of material, knowledge gained, and content. An exhibit judging score sheet will be available at <http://computers.engtech4ks.com/>
4. Follow copyright laws, citing all sources of information in a standard notation. Sources of information must be cited on the front of your exhibit, including all posters and educational display boards.
5. Educational displays are not to exceed a standard commercial 3' x 4' tri-fold display board. Card tables for display are not required but can be used at the county only level. Care should be taken to use durable materials that will withstand Fair conditions.
6. "Construction Kits" that are part of Educational displays must be contained in cases (tackle boxes, sealable containers, etc.) that may not be larger than 1' X 2' X 2' and must have a latch which securely keeps all components contained in the "Construction Kits". Other components are to adhere to appropriate dimensions as stated elsewhere.
7. Educational Project notebooks must be organized in a 3-ring binder.
8. Any three-dimensional display exhibits may not be thicker than 1".
9. Exhibitor's name, county, age, and year(s) in project must be tagged or labeled in a prominent location on the notebook and/or "Construction Kit." For educational displays and/or posters, the exhibitor's name, county, age, and year(s) in project must be tagged or labels on the back of the exhibit. Failure to label an exhibit may result in one ribbon placing deduction.

10. Exhibits should possess the following qualities (in no particular order): A) Central theme, B) What you want others to learn, C) Be designed and constructed in a manner befitting the exhibit, D) Be something you are interested in.

## Computer Science

Superintendents: Contact the Extension Office if interested.

1. The actual construction of computer hardware (For example, building a computer, which would include computer components plugged into a motherboard, discrete circuitry soldered on a printed circuit board, or wire-wrapped circuitry) will be entered in the Electronics Division., except for exhibits entered in Class 5594.
2. Each exhibitor is limited to 1 entry per class. Exhibits must be the result of the current year's project work by 4-H member.
3. Exhibitor(s) name, county, age, and year's in project must be tagged or labeled in a prominent location on all pieces of exhibit including educational display, poster and/or notebook.
4. Team exhibits are defined as developed by two or more 4-H members.
5. The 4-H members must be currently enrolled in the 4-H Computer Science project to exhibit in this division.
6. See the last section for full details about exhibiting posters, display boards and notebooks.
7. If a safety violation is noted by the judges, superintendent, or other staff, the exhibit will receive a participation ribbon (at the judge's discretion).
8. The actual construction of computer hardware (For example, building a computer, which would include computer components plugged into a motherboard, discrete circuitry soldered on a printed circuit board, or wire-wrapped circuitry) will be entered in the Electronics Division., except for exhibits entered in Class 5594.
9. If a safety violation is noted by the judge, superintendent, or other staff, the exhibitor's exhibit, at the judge's discretion, will be disqualified. A safety violation could include Malware, a virus, or any similar program that potentially is harmful. Exhibit Requirements
  - a. All exhibits in the Computer Science division must be entered on a USB drive containing all supporting documents as listed below for each class.
    - i. The USB drive should be included in a manilla folder with the Computer Exhibit Form (found at <http://computers.engtech4ks.com/> or your local extension office) attached to the front.
    - b. The USB drive should be labeled with the 4-H member's name and county.
10. Source code must be included on the USB drive for all computer programming projects coded by the 4-H member. This could include a .txt file, python file, Scratch URL, etc. Failure to include the source code will result in one ribbon deduction.
11. Each exhibit must include written operating instructions including how to locate, run, and use the project. Operating instructions should be printed and placed in the manilla envelope and included digitally on the USB drive.
12. Each exhibit must be accompanied by a typed requirements document included on the USB drive. See [link] for a template that can be used for documenting requirements.
  - a. The requirements document should be started at the beginning of the project. It will include a list of goals and requirements that the 4-H member wants to include or achieve in their final project.
  - b. The project requirements section is formatted as a checklist, with the 4-Her checking off what they accomplished and making adjustments throughout their work on the project as needed.

- c. Flow charts, designs, or other diagrams may be included for computer programs to show the logical flow of the program as needed.
13. For county fairs, it is recommended to print screenshots for display at fairs that don't have electronic displays available.
  14. All electric components of micro controlled devices must be adequately covered or concealed with a protective enclosure. Paper is NOT considered an adequate enclosure or covering for electrical components.
  15. Judging Criteria: Parents and youth must coordinate with the County Extension Office to ensure a computer is available or notify the Extension Office that they are bringing a project in this division.
    - a. A physical computer with the following minimum configuration to test exhibits with and view files: Microsoft Windows® 10 or Windows® 11, Microsoft Office® 365 (Excel, Power Point, & Word), Microsoft Visual Studio®, Microsoft Edge Browser®, Mozilla Firefox® Browser, Google Chrome® Browser, Adobe Acrobat Reader®, Apache Open Office®, and Scratch Desktop editor (offline version)
    - b. Judging of micro-controlled devices is based on the code, not the hardware.
    - c. Judging will be based on a score sheet that can be found at <http://computers.engtech4ks.com/>. There are three (3) areas each exhibit will be judged on. They are: Requirements document, Operating Instructions, Functionality (how well did the project meet project objectives)

Classes:

5590 Computer program, application, app, script, or coded system that is new and unique (not merely a file run in a program, such as a 'word document' or a picture drawn in 'Microsoft Paint').

5591 Coded website built entirely by the 4-H Member (not using a pre-made template generator such as Wix or Squarespace). Items in this class could be coded in HTML, CSS, Javascript, Wordpress, or other web-based programming languages or platforms.

5594 Microcontroller or microcomputer application - a small circuit board that is programmed to accomplish a specific task (projects built and programmed using Raspberry Pi, Arduino, etc.)

5595 Intermediate (9-13) Display, Notebook, or Poster

5596 Senior (14-18) Display, Notebook, or Poster

## Robotics

Superintendents: Contact the Extension Office if interested.

1. Each exhibit must include a robot, information packets are not a sufficient exhibit.
2. Robots must have automated articulated structures (arms, wheels, grippers, pneumatic, hydraulic, etc.). Game consoles that display on a screen are not considered robots and should either be entered in the computer sciences division or electronics and renewable energy project. Robots requiring no assembly, just programming, such as Ozobots, are considered computer sciences projects as the skill is focused on the programming not on the construction of the robot.
3. Robot dimensions should not exceed 2 feet high, by 2 feet wide, by 2 feet deep. If displayed in a case (not required for the state fair, but strongly encouraged for county fairs) the outside case dimensions should not be excessive. The display case should have the exhibitor's information attached to both the lid and cover, as the top art of the case may be separated from the display.
4. 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" x 4" x 36" or 4" x 8" x 18" or 6" x 6" x 16"). The container, if used, and/or any large objects (such as mats or obstacles) should be labeled with the exhibitor's name(s) and county or district as they will be stored separately from the exhibit.

5. 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.
6. Robots may be powered by an electrical, battery, water, air, or solar source only. Junk drawer robots may be powered by a non-traditional power source. Robots powered by fossil fuels/flammable liquids will be disqualified. Robots 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 inflict damage and/or harm to individuals, animal life, and/or property.
7. Remote controlled robots are allowed under certain conditions provided that the robot is not drivable. Robots programmed on phones/tablets need to have a specific program created, using motion controls to move the robot are not acceptable, for example "press forward on the screen to make the robot go forward." Robotic arms (hydraulic or electric) are allowed. A remote is allowed, provided more than a single action happens when a single button is pressed on the remote, for example "a motor spins for 3 seconds, at which point an actuator is triggered, then the motor spins for 3 more seconds." Remote controlled cars, boats, planes and/or action figures, etc. are not allowed.
8. Each robot must be in working condition. The judges will operate each robot to evaluate its workmanship and its ability to complete its intended task. It should follow the instructions provided for operation so that the judge can follow along with the provided instructions. For county fairs, where consultation judging is used the video requirement should be waived in favor of actual operation of the robot.
9. Each exhibitor is required to complete the "4-H Robotics Exhibit Information Form" which is available through your local K-State Research and Extension office or at [2024-Robotics-Exhibit\\_Final.pdf](#)
10. This form must be attached to the outside of a 10" x 13" manila envelope. All revisions of all forms previously released for the Engineering & Technology division either undated or dated prior to current year are void for use and new forms must be obtained and used that are dated by the State 4-H Office for the current year. Use of old forms should result in the loss of one ribbon placing for exhibits.
11. 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 (do not need to be printed), a video, and one to five pages of project photographs. 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. Robot programming information can be, but not limited to, source code, block diagrams, screen captures of the coding window, and other images that show the programming logic used. The exhibitor may enter their robotics project listed under the electric and renewable energy project if the exhibitor so chooses.
12. 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 insured. 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.
13. Exhibitor's name(s) and county or district must be tagged or labeled on the robot such as on the bottom of the robot, exhibit cards are not an acceptable form of labeling.

Classes:

Intermediate Division (Ages 9 – 13 years)

5509 Robot made from a commercial (purchased) kit (no programming, just assembly).

5510 Robot designed by exhibitor. The robot must not be a mere modification of an existing robot kit or plan.

5511 Programmable robot made from a commercial (purchased) kit.

5546 Robot designed and constructed by exhibitor or from a commercial kit, that is operated by a remote-controlled device.

5544 Junk Drawer Robotics.

Senior Division (Age 14 years and older)

5313 Robot made from a commercial (purchased) kit (no programming just assembly).

5514 Robot designed by exhibitor. The robot must not be a mere modification of an existing robot kit or plan.

5515 Programmable robot made from a commercial (purchased) kit.

5547 Robot designed and constructed by exhibitor or from a commercial kit, that is operated by a remote-controlled device.

5545 Junk Drawer Robotics.

5546 Intermediate (9-13) Display, Notebook, or Poster

5547 Senior (14-18) Display, Notebook, or Poster

### Uncrewed Aircraft Systems (UAS)

Superintendents: Kevin Thompson, Jace Thompson

1. The information that accompanies the UAS must be limited to the 4-H Engineering & Technology Exhibit Information Form which is affixed to a 10" x 13" envelope. This envelope should NOT be attached to the UAS. This may be downloaded from <http://uas.engtech4ks.com/>. Any UAS exhibit not including this completed envelope will receive an automatically participation ribbon. All revisions of forms previously released for the division dated prior to current year are void for use and new forms must be obtained and used that are dated by the Kansas State 4-H Office for the current year. For scratch built UAS kits, if modifications are made to the exhibit, a page should be attached noting those modifications. See State Fair rules for State entries.
2. Exhibitor's The exhibitor's name (or exhibitor number), county, or if applicable district, age, and years(s) in project must be tagged or labeled on the exhibit, educational display, notebook, and/or poster.
3. Uncrewed Aerial Aircraft Systems that include or depict weaponry of any kind will be disqualified.
4. For scratch built UAS kits, if modifications are made to the exhibit, a page should be attached noting those modifications.

5. If a safety violation is noted by the judges, superintendent, or other staff, the exhibitor's exhibit, at the judge's discretion, will may receive a reduced ribbon placement, disqualification, or participation ribbon.
6. For practical application entries, the UAS is not required to be displayed as part of the exhibit, only the supporting material illustrating the application.
7. The same UAS may be used by multiple exhibitors for different practical application entries.

Classes:

Intermediate Division (Ages 9 – 13 years)

**5701** Uncrewed Aerial System designed and constructed by exhibitor that is operated by a remote-controlled device. The UAS must not be a mere modification of an existing kit or plan. You may not exhibit a UAS that is purchased off the shelf in this class.

**5702** Practical application of an Uncrewed Aerial System constructed from a commercial (purchased) kit. This includes 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 Russian olive trees, eroded soils, and bindweed in fields, etc. There are also many other non-agricultural UAS uses that would be appropriate for this class.

Senior Division (Ages 14 and older)

**5706** Uncrewed Aerial System designed and constructed by exhibitor that is operated by a remote-controlled device. The UAS must not be a mere modification of an existing kit or plan. You may not exhibit a UAS that is purchased off the shelf in this class.

**5707** Practical application of an Uncrewed Aerial System constructed from a commercial (purchased) kit. This includes 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 Russian olive trees, eroded soils, and bindweed in fields, etc. There are also many other non-agricultural UAS uses that would be appropriate for this class.

Educational Exhibit Rules – See Engineering and Technology Educational Exhibit Rules.

Classes:

**5708** Intermediate (9-13) Display, Notebook, or Poster

**5709** Senior (14-18) Display, Notebook, or Poster

## Entomology

Superintendents: Theresa Root, AnnaMaria Root

1. Read Insect Collection Rules, Notebook Rules, Educational Display Rules, and Monarch Butterfly Educational Display Rules. Violation of any of the following rules may result in disqualification.
2. A 4-H member may exhibit in the Entomology Collection, Entomology Notebook and/or Educational Display classes in the Beginning, Intermediate or Advances phase in which they enroll. 4-H members who have been previously exhibited in Notebooks or Educational displays, need to start with the Beginning Phase of Entomology Collections, not the Introductory phase.
3. The Introductory phase is NOT a State Fair Class and should follow the guidelines as stated in the Class description.

4. Please refer to Kansas State Fair Book for current 4-H year for up-to-date Entomology project rules.

#### Insect Collection Rules:

1. All entries should be submitted in an 18 x 24 x 3.5-inch wooden display box with a clear plastic top (such as Plexiglas). Boxes can be handmade or purchased as long as they are of the correct size. Box instructions and plans can be found online.
2. 4-H members may choose to use one of two taxonomies:
  - a. As printed in "Insects in Kansas" book,
  - b. As which follows [www.bugguide.net](http://www.bugguide.net).
3. Each exhibitor is required to identify each box with two identification labels bearing Exhibitor's name, county or district, the collection class 4-H'er is enrolled in and statement of taxonomy used. 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 the box can be displayed lengthwise.
4. The number of orders, specimens (and families where required) must be included on both of the exhibitor's box identification labels. Only one adult insect per species can be used in the Collection Boxes and Notebook Classes, unless labeled as male or female and correctly identified.
5. Arrange specimens in groups or rows parallel to the short sides of the box. Specimens are to be arranged by Order in the box, then Family where required.
6. Two labels should be centered on the pin beneath each specimen. First (closest to the specimen) is the common name label and the second label should include date/locality. Full county name and state abbreviation should be on the second label. Collector's name (or host) on the date/locality label is optional.
7. The specimens should be collected by the exhibitor and should focus on Kansas insects. Insects may be collected from one county into bordering states and labeled accordingly. Please refer to "Entomology Collection Exhibit Resource" for full details on out-of-state insects in collections.
8. Only specimens of the class Insecta should be included.
9. Purchased insects are not to be exhibited in collections, but they may be used in educational displays.
10. Specimens of soft bodied insects such as aphids, lice, termites, etc. should be exhibited in alcohol filled vials; however, the use of alcohol filled vials should be limited to only those specimens that lose their shape when pinned, since the vials pose a significant hazard to the rest of the collection if they become loose in transit.
11. Any major violation of rules will result in the exhibit being dropped one ribbon placing. Examples would include, but are not limited to: incorrect display box size, missing paperwork, feet on display boxes, no special project in notebooks, etc.
12. After the first year in Entomology, all 4-H members need to add an 8 ½ by 11-inch sheet of paper to their collection that states what they did to improve their collection for the current year. This should include how many new insects were added to the display box (please list), how many insects were replaced in the display box (please list), and number of new orders and/or families were added to the display box. Other optional things that could be included are number of insects caught for the year, number of new Orders added this year, number of talks and/or demonstrations given, activities participated in, leadership roles, etc. This paper should be taped to the upper left corner on the front of your display box.
13. Insect species listed as Species in Need of Conservation, Threatened, or Endangered by the Kansas Department of Wildlife and Parks (KDWP) or the U.S. Fish and Wildlife Service (USFWS) may not be collected or displayed in insect collections or educational exhibits. The most current species lists can be found here: KDWP: <https://ksoutdoors.gov/Services/Threatened-and-Endangered->

Wildlife/Kansas-Threatened-and-Endangered-Species-Statewide or USFWS:  
<https://ecos.fws.gov/ecp/>

14. The following insect is currently listed as Threatened or Endangered by the U.S. Fish and Wildlife Service. No specimens may be collected or displayed: American Burying Beetle (*Nicrophorus americanus*)
  - Inclusion of a threatened or endangered species specimen will be considered a major violation and will result in the exhibit being dropped one ribbon placement. Additional details are available on the Entomology project page at [www.kansas4-h.org](http://www.kansas4-h.org).
  - Photographs are permitted in place of specimens. Photos must depict live insects. Youth may not kill insects to obtain photographs or damage habitat in the process.

See section below for best collection practices for species of ecological importance and/or being considered in decline or potential listing on SINC (species in need of conservation) and/or threatened/endangered species lists.

- Species in Decline and Recommended Collection Practices. The species listed below are not currently protected under federal or state regulations; however, they are under consideration for future protective status. To support ongoing conservation efforts, Kansas 4-H is doing its part and not allowing 4-H members to collect these species at this time. The inclusion of these specimens will be considered a major violation and will result in the exhibit being dropped by one ribbon placement: 1. Monarch Butterfly (*Danaus plexippus*), 2. Eastern Regal Fritillary Butterfly (*Argynnis idalia idalia* or *Speyeria idalia*), or 3. Western Regal Fritillary Butterfly (*Argynnis idalia occidentalis* or *Speyeria occidentalis*)
15. A minimum of 10 new specimens must be added and/or replaced each year.
  16. Do not put the spindle-shaped bag of a Bagworm in your collections (as a female example of the species.) These bags must be cut open to determine if the caterpillar inside is a male or female. Opening the box to confirm the ID correctness could pose a significant risk to the collection.
  17. For projects displayed in box-style exhibits—such as Entomology or Geology—that must be opened for judging, exhibitors may choose to include a closure mechanism on the box. While closures are not required, their use will not result in a ribbon deduction. Acceptable options include Velcro strips or hook-style fasteners. Closures should not interfere with the box's ability to be displayed on a shelf and must not be lockable.

Notebook Rules:

1. Individual entries are to be placed for display in a three-ring notebook for competition. For the Intermediate and Advanced level, two notebooks may be used. A Title Page must be placed in the front of the second notebook. (Refer back to Rule #3 in Notebook Rules).
2. 4-H members who have been previously enrolled in or are currently enrolled in the other phases of the Entomology project need to start with the Beginning I Phase of Entomology Notebooks, not the introductory phase.
3. Each exhibitor is required to identify the notebook by placing a Title Page in the front of the notebook bearing the exhibitors name, county or district and class 4-H'er is enrolled in and statement of taxonomy used: Option A: "Insects in Kansas" book, or Option B: which follows [www.bugguide.net](http://www.bugguide.net). The number of orders, specimens and families (required in Intermediate and Advanced classes) must also be included on the Title Page.
4. Specimen pages should be grouped according to order and should include one page per species. If more than one insect is in the photo, an arrow to indicate identified insect should be used.
5. Date, common name, full county name and state abbreviation should be included for each species. Collector's name on the specimen page is optional.

6. Specimen pages should have two different views of the insect if possible. If pictures are taken on different dates/localities, include information for both.
7. A statement describing the habitat where found/host plant may be included and is encouraged and will be worth a bonus 10 points total, not per page. For Intermediate and Advanced notebooks, this is strongly encouraged.
8. A divider page is to be placed in front of each order of insects with the order name printed on the tab for the page as well on the front of the divider page.
9. For the Intermediate and Advanced classes, insects are also to be grouped by family behind each order divider.
10. After the first year in Entomology, all 4-H members need to add an 8 ½ by 11 inch sheet of paper to their Photo Collection Notebook that states what they did to improve their notebook for the current year. This should include how many new insect photo pages were added to the Notebook (please list), how many insect photo pages were replaced in the Notebook (please list), and number of new orders and/or families added to the Notebook. Other optional things that could include are number of insects photographed for the year, number of new Orders added this year, number of talks and/or demonstrations given, activities participated in, leadership roles, etc. This paper should be placed right behind the Title Page in your Notebook.
11. A special project must be completed each year and included in the notebook. See project guideline materials for specifications.
12. Any major violation of rules will result in the exhibit being dropped one ribbon placing. Examples would include, but are not limited to: incorrect photo size, missing paper work no special project in notebooks, etc.
13. A minimum of 10 photo pages of new species must be added and/or replaced each year.

#### Educational Display Rules:

1. Share with others what you learned in this project. Exhibit any activity or learning experience related to the field of entomology or the Teaming with Insects curriculum that does not fit into Entomology Collection or notebook classes above.
2. Follow copyright laws as explained in the General Rules.
3. The exhibit may be, but isn't limited to, original works, digital presentations (must provide printed hardcopy for exhibit purposes for duration of state fair), programs, websites, games, apps, display box, notebook, display or poster which you have made.
4. If the exhibit is a wooden display box, it must be 18 X24 X 3.5 inches with a clear plastic top (such as plexiglass) and displayed horizontally. If the exhibit is a poster, it must not be larger than 22" X 28". If the exhibit is a display, maximum size is not to exceed a standard commercial 3' X 4' tri-fold display board.
5. Name and county/ district must clearly be marked on educational exhibits.
6. Refer to Entomology General Rule 14 for information on Threatened and Endangered Species specimens that cannot be displayed in Educational Exhibits.
7. Any major violation of rules will result in the exhibit being dropped one ribbon placing. Examples would include, but are not limited to: incorrect display box size, missing paper work, feet on display boxes, no reference for information and/or photos, etc.

#### Monarch Butterfly Educational Display Rules:

1. Specimens of the actual Monarch Butterfly insect, caterpillars, or chrysalis MAY NOT BE USED in these displays.
2. Exhibits should teach the public about the Monarch Butterfly and/or ways to protect and conserve it. The information could show nectar sources for adult butterflies and food sources for caterpillars, Monarch tagging activities, collection of native milkweed and the packaging it to give to others to plant, a group working together to plant a Monarch friendly garden, etc.

3. 4-H members may create a poster, notebook, standard size tri-fold diorama, slide show or other visual display that shows information on Monarch Butterflies. If a slide show is created, it should be presented on a zip drive along with a printed copy of the presentation.

Classes:

**6500** Beginning I Entomology Collection: Display in one standard box a minimum of 50 and maximum of 125 species representing at least 7 orders. Follow the guidelines listed for Collections. Members can exhibit in this class a maximum of 3 years or until they receive a purple ribbon at the Kansas State Fair, whichever comes first and then they must move up a division.

**6501** Beginning II Entomology Collection: Display in one standard box a minimum of 75 and maximum of 150 species representing at least 9 orders. Follow the general guidelines listed for Collections. Members can exhibit in this class a maximum of 3 years or until they receive a purple ribbon at the Kansas State Fair, whichever comes first and then they must move up a division.

**6503** Intermediate Entomology Collection: Display a minimum of 100 and a maximum of 300 species representing at least 10 orders. Two standard boxes can be used. Follow the general guidelines listed for Collections. In addition, family identification is required for all insects in any two of the following six orders: (only two will be counted for judging)

“Insects in Kansas” book - Orthoptera, Hemiptera, Homoptera, Coleoptera, Hymenoptera, and/or Diptera. or

“Insects in Kansas Book: 2016 Revised Taxonomy,” which follows [www.bugguide.net](http://www.bugguide.net) – Taxonomy - Odonata, Orthoptera, Hemiptera, Coleoptera, Hymenoptera, and/or Diptera. Members can exhibit in this class a maximum of 3 years. A 4-H member must move up if they receive a purple ribbon at the Kansas State Fair.

**6505** Advanced Entomology Collection: Display a minimum of 150 and a maximum of 450 species representing at least 12 orders. Three standard boxes can be used. Follow the general guidelines listed for Collections. Family identification is required for all insects belonging to the six basic orders as outlined under the Intermediate phase. Only families in the above six orders will be counted for judging. Family identification of insects in the remaining orders is optional, but desirable as long as accuracy is maintained. Members may continue to exhibit in this class at the Kansas State Fair for an unrestricted number of years as long as they remain eligible for 4-H membership.

**6507** Introductory Entomology Notebook: Display a minimum of 10 and a maximum of 30 insect species representing at least 6 different orders. Follow the general guidelines listed for Notebooks, including the Special project. A 4-H member must be of minimum age to compete at the Kansas State Fair. A 4-H member may exhibit in this class for a maximum of two years.

**6508** Beginning I Entomology Notebook: Display a minimum of 20 and a maximum of 50 insect species representing at least 7 different orders. Follow the general guidelines listed for all Notebooks, including the Special project. Members can exhibit in this class for a maximum of 3 years or until they receive a purple ribbon at the Kansas State Fair.

**6511** Beginning II Entomology Notebook: Display a minimum of 40 and a maximum of 70 insect species representing at least 8 different orders. Follow the general guidelines listed for all Notebooks, including the Special project. Members can exhibit in this class for a maximum of 3 years or until they receive a purple ribbon at the Kansas State Fair.

**6509** Intermediate Entomology Notebook: Display a minimum of 60 and a maximum of 100 species representing at least 9 orders. Follow the general guidelines listed for Notebooks, including the Special project. In addition, family identification is required for all insects in any two of the following orders: (only two will be counted for judging)

“Insects in Kansas” book - Orthoptera, Hemiptera, Homoptera, Coleoptera, Hymenoptera, and/or Diptera, or

“Insects in Kansas Book: 2016 Revised Taxonomy” which follows <https://bugguide.net> Taxonomy, Odonata, Orthoptera, Hemiptera, Coleoptera, Hymenoptera, and/or Diptera. Members can

exhibit in this class a maximum of 3 years or until they receive purple ribbon at the Kansas State Fair. A 4-H member must move up if they receive a purple ribbon.

**6510** Advanced Entomology Notebook: Display a minimum of 100 and a maximum of 200 species representing at least 12 orders. Follow the general rules listed for Notebooks, including the Special project. Follow the general guidelines listed for Notebooks. Family identification is required for all insects belonging to the six basic orders as outlined under the Intermediate phase. Only families in the above six orders will be counted for judging. Family identification of insects in the remaining orders is optional, but desirable as long as accuracy is maintained. Members may continue to exhibit in this class for an unrestricted number of years as long as they remain eligible for 4-H membership.

**6502** Beginning Educational Exhibit: Class for individuals that are exhibiting in the Beginning I and II Collection or Beginning I or II Notebook Classes. If only exhibiting in this category, then ages 9-12.

**6504** Intermediate Educational Exhibit: Class for individuals that are exhibiting in the Intermediate Collection or Intermediate Notebook Classes. If only exhibiting in this category, then ages 11-14.

**6506** Advanced Educational Exhibit: Class for individuals that are exhibiting in the Advanced Collection or Advanced Notebook Classes. If only exhibiting in this category, then ages 13 or older.

**6520** Beginning Monarch Butterfly Educational Display Class: for 4-H members enrolled in Beginning I or II Entomology.

**6530** Intermediate Monarch Butterfly Educational Display Class: for 4-H members enrolled in Intermediate Entomology.

**6540** Advanced Monarch Butterfly Educational Display Class: for 4-H members enrolled in Advanced Entomology.

## Geology

Superintendents: AnnaMaria Root, Eric Root

1. Read General Rules. Violation of any of the following rules may result in disqualification. All decisions will be made by a county agent and their decision is final.
2. The exhibit box's outside dimensions should be 18" x 24" x 3½". Plexiglas covers are required. Boxes with glass covers WILL NOT be accepted. 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. If a box has a sliding Plexiglas cover, it must be removable from the top. Screws, locks, or other devices that would prevent judges from removing the cover should not be used. For Lapidary classes 5300-5304 only, the dimensions of the box should be appropriate for the display, but outside dimensions should not exceed 18"x24"x31/2".
3. Each exhibitor is required to identify each display box by placing an identification label bearing their whole name or first initial with last name, county or district, and number of specimens in the upper left-hand corner of the Plexiglas cover and by attaching a label with the same information on the lower right corner of the box (outside).
4. Exhibitor may enter in both geology and lapidary classes. Exhibitor may show in only one of the first four geology classes (6000, 6001, 6002 or 6003). Exhibitor may also show in geology class 6004 Geology Educational Exhibit, 6005 Mineralogy, 6006 Paleontology, 6007 Petrology and in one lapidary class.
5. All specimens must be collected in the state of Kansas (only exception-see #7). New specimens must be collected during the current 4-H year, which will be allowed starting on the day after the conclusion of the State Fair.
6. For the geology classes 6000, 6001,6003, specimens should be mounted in the box by proper groups: rocks, minerals, fossils. Fossils must be identified to the Phylum, Class and Genus level. (if possible, or part if Genus cannot be determined). The Genus specimen name is to begin with a capital letter.

and the whole specimen's name must either be italicized or underlined, not both. Species name is not required however, if a species name is used it must be all lowercase and either italicized or underlined, not both. The words "Phylum, Class, Genus" on labels are to be spelled out, not abbreviated. More than one specimen of the same kind of rock or mineral or species of a fossil may be exhibited if this duplication represents different geological formations. Specimen label must show this distinction (Fort Hays limestone, not just limestone; calcite from the Greenhorn Formation, not just calcite; Phylum: Brachiopoda Class: Articulata Genus: Composita from the Morrill Limestone Member, not just Phylum: Brachiopoda Class: Articulata Genus: Composita).

7. For geology classes 6000, 6001, 6002, 6003, 6005, and 6006, and 6007, all specimens must be collected by the participant (not purchased) from locations in Kansas, with the exception of Tri-State Mining Area specimens collected from these three adjacent counties: Ottawa County, OK; Newton and Jasper Counties, MO. Other out of state specimens will not count in the minimum number for the class, nor will they be considered in the judging.
8. For projects displayed in box-style exhibits—such as Entomology or Geology—that must be opened for judging, exhibitors may choose to include a closure mechanism on the box. While closures are not required, their use will not result in a ribbon deduction. Acceptable options include Velcro strips or hook-style fasteners. Closures should not interfere with the box's ability to be displayed on a shelf and must not be lockable.

Classes:

**6000** Geology. Display at least 15 rocks, minerals, and fossils collected during the current 4-H year. Exhibitor is limited to one exhibit box. Only those exhibiting at State Fair for the first time may enter this class.

**6001** Geology. Display at least 30 different rocks, minerals, or fossils, at least 5 of each. Fifteen must be collected during the current 4-H year. Exhibitor is limited to one exhibit box. This class is open to those exhibiting either second or third time at State Fair.

**6002** Geology. Display at least 45 rocks, minerals, or fossils, at least 5 of each. Fifteen must be collected during the current 4-H year. Exhibit limited to two boxes. This class is open to those exhibiting either the fourth or fifth time at the State Fair. Identify the rocks as igneous, metamorphic or sedimentary. These rock types must be spelled out on labels or have a legible key.

**6003** Geology. Display at least 60 rocks, minerals, or fossils, at least 5 of each. Fifteen must be collected during the current 4-H year. Exhibit limited to two boxes. This class is open to those exhibiting the sixth time or more at the State Fair. Identify the rocks as igneous, metamorphic or sedimentary. These rock types must be spelled out on labels or have a legible key.

**6004** Geology Educational Exhibit: Exhibit relating to everyday living; or to a mineral test, a rock formation, geological history, species of a fossil, forms of one mineral, a variation of one kind of rock, archaeological artifacts, or Indian artifacts. Digital formats are accepted. Please make arrangements for the judge to view your exhibit and have a hard copy for display. List your sources used (example – web address or books reviewed as a citation list). Exhibit limited to 4 feet of table space. Care should be taken to use durable materials that will withstand State Fair conditions. Exhibitor may show in the class regardless of number of times he or she has exhibited at State Fair or whether exhibitor has entries in classes 6000, 6001, 6002 or 6003. Exhibitor may also exhibit in lapidary class.

**6005** Mineralogy. Display a minimum of 15 mineral specimens collected in Kansas, at least 5 of which have been collected during the current 4-H year. The minerals are to be grouped by mineral class (i.e.:

Carbonates, Oxides, Silicates) and at least 3 classes must be represented. The member must use one standard display box (see #1). The specimens must be labeled with the number of the specimen, date collected, name of specimen, county where collected and chemical composition (ie: CaCO<sub>3</sub> for calcite) if known.

**6006 Paleontology.** Display a minimum of 15 fossil specimens collected by the participant in Kansas, at least 5 of which have been collected during the current 4-H year. The fossils are to be grouped by Phylum and Class, and at least 3 phyla must be represented (Brachiopoda, Chordata, Mollusca, etc.) The member must use one standard display box (see #1). The specimens must be labeled with the number of the specimen; date collected; county where collected; formation, member, or source; phylum, class, and genus or part; and geologic age (Cretaceous, Permian, Pennsylvanian, etc.) See #6 for additional fossil labeling expectations.

**6007 Petrology.** Display a minimum of 15 rock specimens collected in Kansas, at least 5 of which have been collected during the current 4-H year. Rocks are to be grouped by the 3 rock classes (Sedimentary, Igneous, and Metamorphic). You must display at least one specimen from each of the three classes. The specimens must fit in one standard display box (see #1). Specimen labels must include a specimen number, the date collected, name of specimen, and the county where collected. All rocks must be identified by the formation and member name (Examples: Fort Hays Limestone, Member of the Niobrara Chalk Formation) or source (Examples: Rocky Mountain Outwash, glacial till).

#### Lapidary Classes

1. The dimensions of the box should be appropriate for the display but outside dimensions should not exceed 18" x 24" x 3½". The work (polishing/tumbling) must be done by the exhibitor as this is part of the learning process. The lapidary will be judged on the following criteria:
  - a. Workmanship and Content - 60 points
  - b. Presentation and Showmanship - 30 points
  - c. Accuracy of Information - 10 points
2. All lapidary specimens must be labeled with the following information:
  - a. Specimen name
  - b. Place of origin (country, state, or county; county required for Kansas specimens)
  - c. Purchased or self-collected
  - d. Date lapidary treatment began
  - e. Date lapidary treatment completed (Treatment completed after State Fair will be considered a new year specimen.)

**6101 Lapidary.** Display at least 5 varieties of polished (tumbled) specimens and 5 varieties of unpolished specimens that have not yet received lapidary treatment. These do not have to be an example of "before and after", nor do they have to be self-collected. Locales must be identified. Only those exhibiting lapidary at the State Fair for the first time may exhibit in this class.

**6102 Lapidary.** Display before-and-after examples of at least 3 varieties of specimens, at least 2 tumble-polished and 2 unpolished of each. There is no requirement that the 4-H member collect any of these. Locales must be identified. Lapidary work should be done during the current 4-H year.

**6103 Lapidary.** Display before-and-after examples of at least 6 varieties of specimens, at least 2 tumble-polished and 2 unpolished of each. At least two varieties should be collected from the native site by the 4-H member, at least one of which comes from Kansas. Locales must be identified. Lapidary work on at least three varieties should be done during the current 4-H year.

**6104** Lapidary. Display before-and-after examples of at least 9 varieties of specimens, at least 2 tumble-polished and 2 unpolished of each. At least three varieties should be collected from the native site by the 4-H member, at least two of which comes from Kansas. Locales must be identified. Lapidary work on at least three varieties should be done during the current 4-H year.

**6105** Lapidary. Exhibit at least 6 specimens that have not previously been exhibited, which have received lapidary treatment. Lapidary treatment may consist of polishing, and end, face, or flat lapping. Specimens must represent at least 3 different varieties and include at least three cabochons of any size or shape, only one of which may be free-formed. A cabochon is a style of cutting in which the top of the stone forms a domed or curved convex surface. Three of the specimens must be mounted into jewelry findings.