

DEPARTMENT – BUILDING EXHIBITS

SECTION – AG MECHANICS WELDING

(Must be enrolled in Ag Mechanics Welding Project)

Description: The Ag Mechanics Welding project is starting 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 welding 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. 4-H members must be currently enrolled in the Kansas Ag Mechanics Welding project to exhibit in this division.
2. Each exhibitor may enter one exhibit per class. Exhibits must have been constructed or repaired during the current 4-H year.
3. Wheeled exhibits must utilize a breaking mechanism which prevents the exhibit from freely rolling while on display
4. 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.
5. Top heavy items should be braced or placed in a stand sufficient to prevent it from toppling over while on display
6. Trailers or exhibits too large to fit inside the building, may be displayed outside with permission from the Fair Board. Please contact the Extension Office prior to fair so that proper arrangements can be made.
7. For exhibits with downward swinging parts, such as tailgates, that could pose a fall/striking/crushing hazard should have a tamper resistant locking mechanism such as a "zip-tie" or a "cotter-key" through a release pin that would prevent the swinging part from being accidentally released and falling on someone.
8. Exhibits may not be bound, affixed, attached to the County Fair buildings, except by the superintendent or Extension Staff.
9. 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.
10. Repair projects having adequate original finish need not be repainted
11. Cutting surfaces, such as blades or knives, are to have a protective covering over them to prevent injury. The covering should be easily removed and reinstalled for judging. Foam "pool noodles" and multiple layers of cardboard are acceptable.
12. 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.
13. If the exhibit is powered by flammable liquids (gas, propane, kerosene, etc.) the fuel tank and lines should be drained and allowed to dry, to avoid spills and potential fires
14. Electric powered (battery, corded, solar, or alternative energy) should have a primary shutoff or disconnect switch

15. 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
16. The exhibitor's name(s) and club must be tagged or labeled in a prominent location on the display
17. Each exhibit must include an Ag Mechanics Welding information packet, except display boards. Entry of just a packet without an accompanying exhibit is not a sufficient exhibit.
18. Each exhibitor is required to complete the "4-H Ag Mechanics Welding Exhibit Information Form" (except display boards) which is available through your local K-State Research and Extension office or at <http://welding.engtech4ks.com/>. This form must be attached to the outside of a 10" x 13" manila envelope. Do not tie the envelope to the exhibit.
19. Each exhibit information packet should include the following items: a. bill of materials for the project with associated costs, scrap items used may be listed as having a \$0.00 cost; b. 1 to 5 pages of photos showing work on the exhibit, preferably from a beginning state to final or completed state. If appropriate schematics or working drawings relating to the creation or repaired or appropriate operating instructions.

Introductory -Level 1 classes (about 1 -3 years of experience)

This level is designed for youth with little to no exposure in the project area so that they can gain an understanding of basic principles and methods in the given area.

- 5550 Welding display board** –a 3 foot by 3-foot display board with different pieces of metal attached illustrating different types of welds, each weld being labeled
- 5551 Level 1 Welding ag repair** –repair of ag equipment with welding
- 5552 Level 1 Welding ag fabrication** –creation of new ag equipment with welding
- 5553 Level 1 Welding general repair** –repair of non-ag equipment with welding
- 5554 Level 1 Welding general fabrication** –creation of non-ag equipment with welding
- 5555 Level 1 Welding artistic fabrication**–creation of artistic or interpretive pieces with welding
- 5556 Level 1 Brazing repair**
- 5557 Level 1 Brazing fabrication**
- 5558 Smithing display board** –a 3 foot by 3-foot display board with different pieces of forged metal attached illustrating different forms, each form being labeled
- 5559 Level 1 Smithing** –A design forged with at least one formed element (twists or spirals for example)

Experienced –Level 2 classes (about 4 -6 years of experience)

This level is designed for youth some experience in the project area allowing them to expand on common principles and methods in the given area.

- 5560 Level 2 Welding ag repair** –repair of ag equipment with welding
- 5561 Level 2 Welding ag fabrication** –creation of new ag equipment with welding
- 5562 Level 2 Welding general repair** –repair of non-ag equipment with welding
- 5563 Level 2 Welding general fabrication** –creation of non-ag equipment with welding

5564 Level 2 Welding artistic fabrication –creation of artistic or interpretive pieces with welding

5565 Level 2 Brazing repair

5566 Level 2 Brazing fabrication

5567 Level 2 Smithing –A design forged with at least two different formed elements (twists and spirals for example)

Advanced –Level 3 classes (about 7 -9 years of experience)

This level is designed for youth with vast experience in the project area allowing them to master common principles and methods and expand on advanced techniques in the given area.

5570 Level 3 Welding ag repair –repair of ag equipment with welding

5571 Level 3 Welding ag fabrication –creation of new ag equipment with welding

5572 Level 3 Welding general repair –repair of non-ag equipment with welding

5573 Level 3 Welding general fabrication –creation of non-ag equipment with welding

5574 Level 3 Welding artistic fabrication –creation of artistic or interpretive pieces with welding

5575 Level 3 Brazing repair

5576 Level 3 Brazing fabrication

5577 Level 3 Smithing –A design forged with at least three different formed elements (twists, spirals, and bulbs for example)

Master –Level 4 classes (10 or more years of experience)

This level is designed for youth substantial experience in the project area allowing them to master advanced techniques in the given area

5580 Level 4 Welding ag repair –repair of ag equipment with welding

5581 Level 4 Welding ag fabrication –creation of new ag equipment with welding

5582 Level 4 Welding general repair –repair of non-ag equipment with welding

5583 Level 4 Welding general fabrication –creation of non-ag equipment with welding

5584 Level 4 Welding artistic fabrication –creation of artistic or interpretive pieces with welding

5585 Level 4 Brazing repair

5586 Level 3 Brazing fabrication

5587 Level 4 Smithing –A design forged with at least four different formed elements (twists, spirals, and bulbs for example)

Educational Exhibits Rules

1. For notebooks, display boards, and posters, no additional exhibit information is required; no manila envelope is needed for these exhibits.
2. Exhibits are to have a clear link to the Engineering and Technology areas of astronomy, computers, rocketry, robotics, or uncrewed aerial systems, educational exhibits outside of these Engineering and Technology areas should be displayed in the other program areas. Just because an educational exhibit relates to the broad concept of Engineering and Technology does not qualify it to be displayed in the Engineering and Technology Educational Exhibit area. Exhibits that do not clearly show a clear and direct relationship to the Engineering and Technology project areas of ag-

- mechanics, ABC, astronomy, computers, robotics, rocketry, or UAS as previously defined will be disqualified.
3. Exhibits in posters, notebooks and display boards must contain substantial supporting educational materials.
 4. 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 available at <http://welding.engtech4ks.com/> For example, a rocket that may have crashed and/or is highly damaged may be made into an educational display or poster that tells a great story with many lessons learned.
 5. 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.
 6. Educational displays are not to exceed a standard commercial 3' x 4' tri-fold display board. No card table exhibits will be allowed. Care should be taken to use durable materials that will withstand Kansas State Fair conditions.
 7. "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.
 8. Educational Project notebooks must be organized in a 3-ring binder.
 9. Any three-dimensional poster or display board exhibits may not be thicker than 2 inches.
 10. Engines and igniters for rockets ARE NOT permitted with the exhibit and constitute an immediate disqualification. This is for safety reasons and includes both spent and live engines.
 11. Exhibitor's name, Extension Unit, age, and year(s) in project must be tagged or labeled in a prominent location on the, notebook, and/or "Construction Kit." For education displays and/or posters the exhibitor's name, county, or district, age, and year(s) in project must be tagged or labeled on the back of the exhibit. Exhibit cards are not sufficient as they may be removed or repositioned for display. Failure to label an exhibit may result in one ribbon placing deduction.
 12. Exhibits should possess the following qualities (in no particular order): a. 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 e. Be related to Astronomy. Computer System, Robotics, Rocketry, or Uncrewed Aerial Systems
 13. If a safety violation is noted by the judges, superintendent, or other staff, the exhibitor's exhibit, at the judge's discretion, will receive a participation ribbon.
 14. Posters, Notebooks, and Display Boards may be checked out for use in a Kansas State Fair 4-H demonstration or illustrated talk with prior permission. For permission, check with the superintendent(s). The exhibit must be returned to display immediately after the demonstration/illustrated talk, or the exhibit will be disqualified.

Educational Displays –

Ag Mechanics/Welding – Junior Division (Ages 7-8) (Not State Fair Eligible)

5472 Junior Ag Mechanics/Welding Educational Display

5473 Junior Ag Mechanics/Welding Educational Notebook

5474 Junior Ag Mechanics/Welding Educational Poster

Ag Mechanics/Welding – Intermediate Division (Ages 9 – 13)

5475 Intermediate Ag Mechanics/Welding Educational Display

5476 Intermediate Ag Mechanics/Welding Educational Notebook

5477 Intermediate Ag Mechanics/Welding Educational Poster

Ag Mechanics/Welding – Senior Division (Ages 14 years and older)

5478 Senior Ag Mechanics/Welding Educational Display

5479 Senior Ag Mechanics/Welding Educational Notebook

5480 Senior Ag Mechanics/Welding Educational Poster