AGRICULTURAL MECHANICS PROJECTS
Superintendent:

1. Read “General Rules”.
2. All entries must have been constructed within the past two years. The project cannot have previously been exhibited at the Cowley County Fair. Painting or spot painting is not permitted on projects after arrival on fairgrounds. Projects with wet paint will be deducted five points under finish.
3. The exhibitor must attach the four following items to each project: A) entry card; B) project description, including working drawing; C) itemized bill of materials, including all purchased materials; and, D) list of skills and safety features performed. Pictures are encouraged but are not required. Items A-D shall be enclosed in a two-gallon, recloseable plastic bag and attached to the exhibit.
4. For Sale signs are not permitted on individual projects but the bill of material may contain a statement that the project is for sale.
5. Exhibitors will be limited to one exhibit each in class 0500-0502 plus one exhibit in class 0503.
6. State Fair Qualification: to exhibit an agricultural mechanics project at the Kansas State Fair, the exhibit must have been constructed in the high school ag department by an agricultural education student and a bonafide Kansas FFA member.

Class 0500 - Large Machinery and Equipment. More than $1500 construction cost as justified in bill of material. Examples include gooseneck livestock trailer, straight tongue livestock trailer, single axle trailer (8 ft. or longer), grain trailer, round bale trailer, car trailer.
Class 0501 - Intermediate Machinery and Equipment. Between $500 and $1499 construction cost as justified in bill of material. Examples include cattle working equipment, pickup flatbed, log splitter, box scraper, hydraulic press.
Class 0502 - Small Machinery and Equipment. Less than $500 construction cost as justified in bill of material. Examples include engine stand, picnic table, car ramp, feed bunk, gate, two wheel trailer, cattle clipping chute.
Class 0503 - Micro Project. Less than $100 in construction cost as justified in bill of material. Examples include ornamental and/or recreational items.

NEW FOR 2021: A division of Ag Mechanics is available at the Kansas State Fair. To be eligible for State Fair exhibition, a project must receive a purple ribbon at the Cowley County Fair AND meet the following qualifications:

Description: The Ag Mechanics exhibit area is a new STEM project for 2021. The 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 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 4-H STEM – 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. For the 2021 State Fair 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 breaking 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 dimensions 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 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. The covering should be easily removed and reinstalled 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. 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

13. Electric powered (battery, corded, solar, or alternative energy) should have a primary shutoff or disconnect switch

14. 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

15. The exhibitor’s name(s) and county must be tagged or labeled in a prominent location on the display

16. Each exhibit must include an Ag Mechanics information packet. Entry of just a packet without an accompanying exhibit is not a sufficient exhibit.

17. Each exhibitor is required to complete the “4-H STEM Ag Mechanics Exhibit Information Form” which is available through your local K-State Research and Extension office or at www.STEM4KS.com. This form must be attached to the outside of a 10” x 13” manila envelope. Do not tie the envelope to the exhibit.

18. Each exhibit information packet should include the following items:
   1. Bill of materials for the project with associated costs, scrap items used may be listed as having a $0.00 cost.
   2. 1 to 5 pages of photos showing work on the exhibit, preferably from a beginning state to final or completed state
   3. If appropriate schematics or working drawings relating to the creation or repair
   4. If appropriate operating instructions

19. Additionally, exhibitors may create an optional video (not required) about their project showing its operation and the work they have done. This allows judges
to get a better understanding of the exhibit and allows the youth the opportunity to fully demonstrate 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. If the release is not completed the video will not be included in the video loop on display in the STEM area at the Cowley County Fair.

**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.

- **Class 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
- **Class 5551** Level 1 Welding ag repair – repair of ag equipment with welding  
- **Class 5552** Level 1 Welding ag fabrication – creation of new ag equipment with welding  
- **Class 5553** Level 1 Welding general repair – repair of non-ag equipment with welding  
- **Class 5554** Level 1 Welding general fabrication – creation of non-ag equipment with welding  
- **Class 5555** Level 1 Welding artistic fabrication – creation of artistic or interpretive pieces with welding  
- **Class 5556** Level 1 Brazing repair  
- **Class 5557** Level 1 Brazing fabrication  
- **Class 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  
- **Class 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.

- **Class 5560** Level 2 Welding ag repair – repair of ag equipment with welding  
- **Class 5561** Level 2 Welding ag fabrication – creation of new ag equipment with welding  
- **Class 5562** Level 2 Welding general repair – repair of non-ag equipment with welding  
- **Class 5563** Level 2 Welding general fabrication – creation of non-ag equipment with welding  
- **Class 5564** Level 2 Welding artistic fabrication – creation of artistic or interpretive pieces with welding  
- **Class 5565** Level 2 Brazing repair  
- **Class 5566** Level 2 Brazing fabrication  
- **Class 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.

**Class 5570** Level 3 Welding ag repair – repair of ag equipment with welding  
**Class 5571** Level 3 Welding ag fabrication – creation of new ag equipment with welding  
**Class 5572** Level 3 Welding general repair – repair of non-ag equipment with welding  
**Class 5573** Level 3 Welding general fabrication – creation of non-ag equipment with welding  
**Class 5574** Level 3 Welding artistic fabrication – creation of artistic or interpretive pieces with welding  
**Class 5575** Level 3 Brazing repair  
**Class 5576** Level 3 Brazing fabrication  
**Class 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.

**Class 5580** Level 4 Welding ag repair – repair of ag equipment with welding  
**Class 5581** Level 4 Welding ag fabrication – creation of new ag equipment with welding  
**Class 5582** Level 4 Welding general repair – repair of non-ag equipment with welding  
**Class 5583** Level 4 Welding general fabrication – creation of non-ag equipment with welding  
**Class 5584** Level 4 Welding artistic fabrication – creation of artistic or interpretive pieces with welding  
**Class 5585** Level 4 Brazing repair  
**Class 5586** Level 3 Brazing fabrication  
**Class 5587** Level 4 Smithing – A design forged with at least four different formed elements (twists, spirals, and bulbs for example)

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**AGRICULTURAL MECHANICS PREMIUMS**

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<th>Award Type</th>
<th>Description</th>
<th>Value</th>
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