1. 4-H members must be currently enrolled in the Kansas 4-H STEM-Ag Mechanics (Welding) project to exhibit in this department. In 2021 an exception will be made, due to the project being new.

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 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. 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.

8. Repair projects having adequate original finish need not be repainted.

9. 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.

10. 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.

11. 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.

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

13. 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.

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

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

16. 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.

17. 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.
   c. If appropriate schematics or working drawings relating to the creation or repair.
   d. If appropriate operating instructions.

18. 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. Please bring a device to play your video for the judge at the 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.
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
H-600 Level 1 Welding ag repair – repair of ag equipment with welding
H-601 Level 1 Welding ag fabrication – creation of new ag equipment with welding
H-602 Level 1 Welding general repair – repair of non-ag equipment with welding
H-603 Level 1 Welding general fabrication – creation of non-ag equipment with welding
H-604 Level 1 Welding artistic fabrication – creation of artistic or interpretive pieces with welding
H-605 Level 1 Brazing repair
H-606 Level 1 Brazing fabrication
H-607 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
H-608 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.
H-609 Level 2 Welding ag repair – repair of ag equipment with welding
H-610 Level 2 Welding ag fabrication – creation of new ag equipment with welding
H-611 Level 2 Welding general repair – repair of non-ag equipment with welding
H-612 Level 2 Welding general fabrication – creation of non-ag equipment with welding
H-613 Level 2 Welding artistic fabrication – creation of artistic or interpretive pieces with welding
H-614 Level 2 Brazing repair
H-615 Level 2 Brazing fabrication
H-616 Level 2 Smithing – A design forged with at least two different formed elements (twists and spirals for example)

ADD 4-H STEM: ARCHITECTURAL BLOCK CONSTRUCTION
Judging: Tuesday, July 27th (with other STEM Projects)
1. 4-H members must be currently enrolled in the Kansas 4-H STEM – Architectural Block Construction project to exhibit in this division. In 2021 an exception will be made, due to the project being new.
2. Each exhibitor may enter 4 exhibits. Exhibits must have been constructed during the current 4-H year.
3. Total exhibit dimensions may not exceed 2 feet high, by 2 feet wide, by 2 feet deep
4. All exhibits should be placed in a sturdy see through enclosure with a top, bottom, and 4 sides. A fish tank would be an acceptable enclosure. This is to keep exhibit parts from being “scattered to parts unknown” at the fair. The outer dimensions of the enclosure are part of the total exhibit dimensions.
5. All components used in construction should be dust free, clean, free of chips, scuffs, or cracks.
6. The primary building component should be interlocking blocks, commonly referred to by the brand name of Lego®.
7. Other architectural components can be integrated into dioramas to illustrate architectural aspects that may be difficult to convey with traditional interlocking blocks.
8. The use of existing “store bought” sets for major architectural elements of the display is not allowed, use of figurines from sets is allowed as are using individual bricks to create something different than the architectural component of the set it came from.
9. Displays must have significant architectural components (walls, windows, doors, roofs, canopies flying buttresses, etc.), landscapes are discouraged.
10. Architectural elements should have a consistent look, walls with no pattern or consistency will be deducted one ribbon placing.

11. Gaps or cracks should not be visible between assembled blocks.

12. Doors should open and close, windows can be either fixed or open and close.

13. Vehicles that are intended to stay in a single place should be affixed to base plates with sticky tack, hot glue, or other method.

14. Reveals that show the inside of a structure are acceptable, such as only having three walls to allow an unobstructed view into a room.

15. Mechanical enhancements or motion elements that add motion to the diorama are acceptable and encouraged. If used judges should be able to use them and instructions should be provided for operation.

16. Artistic designs with no architectural design/components are not permitted and two ribbon placings will be deducted.

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

18. Each exhibit must include an Architectural Block Construction information packet. Entry of just a packet without an accompanying exhibit is not a sufficient exhibit.

19. Each exhibitor is required to complete the “4-H STEM Architectural Block Construction 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.

20. Each exhibit information packet should include the following items:
   a. At least one drawing of the desired architecture on graph paper, multiple views (top, front, side) are preferred.
   b. 1 to 5 pages of photos showing work on the exhibit, preferably from a beginning state to final or completed state.
   c. If appropriate operating instructions for mechanical portions of the diorama.

21. Additionally, exhibitors are required to create a video about their project discussing their construction experiences and the architectural elements of the diorama. This allows judges to get a better understanding of the exhibit and allows youth the opportunity to fully explain their exhibit. The video should be no longer than 8 minutes. Please bring a device to play the video to judging on Tuesday.

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

H-620 Diorama illustrating at least 2 architectural features beyond floors, ceilings, and walls

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

H-621 Diorama illustrating at least 4 architectural features beyond floors, ceilings, and walls, and includes 1 or more motion elements

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

H-622 Diorama illustrating at least 6 architectural features beyond floors, ceilings, and walls, and includes 2 or more motion elements

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

H-623 Diorama illustrating at least 8 architectural features beyond floors, ceilings, and walls, and includes 3 or more motion elements