c. If appropriate schematics or working drawings relating to the creation or repair

d. If appropriate, operating instructions

4-H Class

4100 Welding display board: a 3 ft by 3 ft display with different pieces of metal attached illustrating different types of welds, each weld being labeled (1-3 years of experience)

4101 Welding Ag Repair

4102 Welding Ag Fabrication: creation of new equipment

4103 Welding General Repair: repair of non-ag equipment

4104 Welding General Fabrication: creation of non-ag equipment

4105 Welding Artistic Fabrication: creation of artistic or interpretive pieces

4106 Brazing Fabrication

4107 Brazing Repair

4108 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

4109 Level 1 Smithing: a design forged with at least one formed element (twists or spirals for example)

Open Class

4200 Beginning Ag Mechanic (2 years or less experience)

4201 Advanced Ag Mechanics (3 years or more experience)

STEM Architectural Block Construction

Judging Sunday, July 25; 1:00 p.m.

1. Limit 1 entry.

2. Refer to Rules & Regs on pages 4-6.

3. Up to 4 exhibits will be selected to advance to the Kansas State Fair.

4. Total exhibit dimensions may not exceed 2 feet high, by 2 feet wide, by 2 feet deep.

5. 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 throughout the fair.

6. All components used in construction should be dust free, clean, free of chips, scuffs, or cracks.

7. The primary building component 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 for any eligible exhibits for Kansas State Fair. For County Fair, kits may be used for Class 4114 Only. 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 used 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 exhibit’s name and county 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 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 portion of the diorama

21. For all STEM Educational Exhibits, see rules on page 29.

4-H Class

4110 Level I: Diorama illustrating at least 2 architectural features beyond floors, ceilings, and walls. (For 1-3 years of experience)

4111 Level II: Diorama illustrating at least 4 architectural features beyond floors, ceilings, walls, and includes 1 or more motion elements. (For 4-6 years of experience)

4112 Level III: Diorama illustrating at least 4 architectural features beyond floors, ceilings, walls, and includes 2 or more motion elements. (For 7-9 years of experience)

4113 Level IV: Diorama illustrating at least 8 architectural features beyond floors, ceilings, walls, and includes 3 or more motion elements. (For 10 or more years of experience)

4114 Building Creations (Local Only): May use a kit for this class.
10. For all STEM Educational Exhibits, see rules on page 29.

4. Robots must have automated articulated structures (arms, wheels, grippers, etc.). Game consoles that display on a screen are not considered robots and should either be entered in computer system division or energy management project. Robots requiring no assembly, just programing, such as Ozrobots, are considered computer system projects as the skill is focused on the programming not on the construction of the robot.

5. 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.

6. 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 contain (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.

7. 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.

8. 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 could be used to inflict damage and/or harm to individuals, animal life, and/or property.

9. Remote controlled robots are allowed under certain conditions provided that the robot is not drivable. 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...