4115 Educational Exhibit

◇ Open Class ◇
4202 Beginning Diorama: 2 architectural features beyond floors, ceilings, and walls.
4203 Advanced Diorama: 3 or more architectural features beyond floors, ceilings, and walls, plus 1 or more motion elements.
4204 Building Creations

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

1. Limit 1 entry.
2. Refer to Rules & Regs on pages 4-6.
3. Telescopes entered in this division may be built from a kit or by original design. Pre-finished telescopes, which require no construction or painting are not acceptable exhibits.
4. Telescopes are limited to no more than six feet in length. They must be placed on a stationary stand that does not allow the telescope to roll and/or fall over. The stand cannot extend past two feet in length or width.
5. Each exhibitor is required to complete the “4-H STEM Astronomy Information Form, which is available at: www.STEM4KS.com. This form must be attached to the outside of a 10” x 13” manila envelope. You must include construction plans (or a photocopy) for the telescope and place it inside the manila envelope. For notebooks, display boards, and posters, no additional exhibit information is required; no manila envelope is needed for those exhibits.
6. Two photographs showing telescope construction and operation are required. Photographs should be mounted on one side of an 8 1/2” x 11” page. A brief caption should accompany each photograph. Place photos in the 10” x 13” manila envelope.
7. The telescope must be properly assembled and painted with a smooth and uniform finish. Decals, if used, should be attached smooth and tight.
8. Telescopes designed by the exhibitor must be original, not a modification of an existing kit.
9. Exhibitor’s name, county, age, and year(s) in project must be tagged or labeled in a prominent location on the telescope.
10. If a safety violation is noted by the judges, superintendent, or other staff, the exhibit, at judge’s discretion will receive a participation ribbon.

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

◇ 4-H Class ◇
4116 Telescope made from kit
4117 Telescope made from original design
4118 Educational Exhibit

◇ Open Class ◇
4205 Telescope made from kit
4206 Telescope made from original design
4207 Educational Exhibit

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

1. Limit 1 entry.
2. Refer to Rules & Regs on pages 4-6.
3. Exhibitor’s name, county, age, and year(s) in project must be tagged or labeled in a prominent location on the exhibit, educational display, notebook, and/or poster.
4. If a safety violation is noted by the judges, superintendent, or other staff, the exhibit, at judge’s discretion will receive a participation ribbon.
5. Exhibitor must bring a computer that will run their project to the fair for judging as judges typically do not bring computers with them. Operating instructions are required.
6. For more details on Computer System rules and guidelines, please refer to the Kansas State Fair 4-H Exhibitor Handbook.
7. For all STEM Educational Exhibits, see rules on page 29.

◇ 4-H Class ◇
4119 Computer program, application, app, script, or coded system
4120 Computer presentation
4121 Single computer system
4122 Networked system consisting of two or more computers
4123 Chip System
4124 Educational Exhibit

◇ Open Class ◇
4214 STEM: Other

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

1. Limit 1 entry per class, max. of 2 entries, per division.
2. Refer to Rules & Regs on pages 4-6.
3. Each robot must be free-standing, without the need for additional support in order to be moved or exhibited. Each exhibit must include a robot, information packets are not a sufficient exhibit.
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 programming, such as Ozobots, 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”X16” or 4”X8”X6” 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