AEROSPACE

PROJECT SUPERINTENDENT:	Bob Finkbeiner, 317-250-6992, kgdvm@yahoo.com
EXHIBIT CHECK-IN:	Sunday, July 13, 4-6 PM
JUDGING:	Monday, July 14, 1 PM Open Judging
Rocket Launch (optional)	Tuesday, July 8, 12 PM Check-in
Rain Date (optional)	***Monday, July 21, 12 PM Check-in***
RELEASE:	Tuesday, July 22, 9-11 AM, and 5-7 PM
STATE FAIR ENTRIES:	One (1) rocket, remote control aircraft, drone, or poster/display board per level

Project Description:
The excitement and dreams participants experience in sending a rocket into space, making the first solo flight, becoming an astronaut or perhaps someday visiting other planets is never ending. The 4-H Aerospace project provides members countless hours of fun and excitement. No "Ready to Fly" or E2X rockets are acceptable in the 4-H Aerospace project.

Levels:
Beginner (grades 3-5 suggested)
Intermediate (grades 6-8 suggested)
Advanced (grades 9-12 suggested)

Exhibit Guidelines:

- Recommended to complete a minimum of three (3) new activities (regular or optional) each year.
- Recommended to complete a minimum of one (1) new learning experience each year.
- Recommended to complete the Record Sheet and have it signed by your club leader.
- Aerospace Card: 4-H members enrolled in Aerospace must complete and attach an Aerospace card to their exhibit. Cards are available in the Extension Office, online on the Extension website, or through your club leader.
- ***Artificial Intelligence (AI) may be used, with parent permission, when creating this exhibit and is to be documented as a reference. A majority of the work to create this exhibit is to be the 4-H member's original work.***
- All posters, notebooks, and display boards must include a reference list indicating where information was obtained, giving credit to the original author, to complete the 4-H member's exhibit. This reference list should/might include website links, people and professionals interviewed, books, magazines, etc. It is recommended this reference list be attached to the back of a poster or display board, be the last page of a notebook, or included as part of the display visible to the public. A judge is not to discredit an exhibit for the way references are listed.
- Posters are to be 22"x28" and displayed horizontally and placed in a clear plastic sleeve or covered with clear plastic to protect contents. Display boards should be designed to sit on a table using no more than 36" of tabletop space. Space should be left in the lower right hand corner to place an exhibit tag provided by Purdue Extension staff.
- "Ready to Fly" and E2X rockets are not permitted. Rockets may be exhibited with a base, but launch pads are not permitted. All rockets must weigh less than 3.3 pounds and considered an amateur rocket according to FAA regulations. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly. The power source (rocket engine, battery pack, etc.) is to be removed before being placed in public exhibition.
- Rockets will not be launched and remote control aircraft or drones will not be flown at state fair. Launching rockets and flying aircraft or drones at the county level is optional based on adult supervision experience.

Exhibit Class Guidelines:

Beginner: (grades 3-5 *suggested*)
Construct a rocket of your choice designed for a new model rocket enthusiast with a difficulty level that is appropriate for the suggested grade level, or a poster or display board on any topic in the manual. Similar topics not included in the manual are permissible. Rockets cannot be ready-to-fly (RTF) or have plastic fins. Cluster engine rockets and rockets that take an engine D or above are not permitted in this level.

Learn to fly a remote control aircraft or drone of your choice that is age/grade appropriate and compliant with FAA regulations, federal and state laws, and local ordinances. This exhibit choice is to include a notebook or poster including how the aircraft/drone was used and aerospace skills learned. Displaying the aircraft or drone is optional. Other topics could include how a quadcopter operates, controls used to fly a quadcopter, UAV regulations administered by Federal Aviation Administration, commercial, and emergency uses of UAVs, and more.

Intermediate: (grades 6-8 *suggested*)
Construct a rocket of your choice designed for a model rocket enthusiast with some experience and with a difficulty level that is appropriate for the suggested grade level, or a poster or display board on any topic in the manual. Similar topics not included in the manual are permissible. Rockets cannot be ready-to-fly (RFT) or have plastic fins. Cluster engine rockets and rockets that take an engine E or above are not permitted in this level.

Construct or learn to fly a remote control aircraft or drone of your choice that is age/grade appropriate and compliant with FAA regulations, federal and state laws, and local ordinances. This exhibit choice is to include a notebook or poster including how the aircraft/drone was used and aerospace skills learned. Displaying the aircraft or drone is optional. Other topics could include interviewing a certified UAV pilot who works in law enforcement, EMS, fire, Purdue Extension, commercial, or other application. Other options could include creating a flight plan or interfacing with other computer software.

Advanced: (grades 9-12 *suggested*)
Construct a rocket of your choice designed for an experienced model rocket enthusiast and with a difficulty level that is appropriate for the suggested grade level, or a poster or display board on any topic in the manual. Similar topics not included in the manual are permissible. Rockets cannot be ready-to-fly (RFT) or have plastic fins. Cluster engine rockets and rockets that take an engine G or above are not permitted in this level.

Construct or learn to fly a remote control aircraft or drone of your choice that is age/grade appropriate and compliant with FAA regulations, federal and state laws, and local ordinances. This exhibit choice is to include a notebook or poster including how the aircraft/drone was used and aerospace skills learned. Displaying the aircraft or drone is optional. Other topics could include using “stitching” software to produce an orthomosaic map for a research purpose, identifying Department of Transportation Aeronautical Chart features and explain how these are important to a drone pilot, how to obtain a drone pilot license, or more. If 16 years of age or older the member could obtain a license by completing and passing the official FAA Part 107 UAV licensing test.

NOTE: No engines should be included in rockets.

OPTIONAL: A rocket launch is held before the fair for 4-H Aerospace exhibitors. You must exhibit an Aerospace project at the fair in order to participate in the rocket launch. You should make an additional rocket to launch.