

AEROSPACE

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IMPORTANT NOTES:

1. The Aerospace project is completed by constructing either a rocket, a remote control aircraft, or a drone or by displaying a poster board. The 4-H member will be enrolled in the project by their grade level in school.
2. **All 4-H members must do 3 activities from the grade appropriate manual. At least 2 must be from the required activities.** If these activities are not completed by project check-in the 4-H member will be allowed to exhibit but will **not** be eligible for Champion or Reserve Champion in any of the Aerospace categories. The member's 4-H club leader must sign the record sheet. Only completed record sheets will be signed, blank record sheets will not be signed.

ROCKET CONSTRUCTION CONTEST GUIDELINES:

1. All rockets, aircrafts, or drones must be built according to the National Association of Rocketry (NAR) Model Rocket Safety Code found in the National 4-H Manuals and AB-25. "Ready-To-Fly" (RTF), E2X, or pre-finished rockets are **not** allowed. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly.
2. The 4-H members must bring the instructions and face card from the bag or box for the rocket, aircraft, or drone they have built, in case there is a question why a certain building technique was used and to verify the skill level is correct for the grade the 4-H member is enrolled in. All rockets, aircraft, and drones **must** be constructed and finished (painted) by the 4-H member.
3. In grades 8-12 the 4-H member should go through a very carefully thought out process when selecting the rocket/aircraft/drone motor(s) and impulse-ratings for their new rocket design or up-scale. Motor selection is a very serious aspect of rocketry and great care must be taken in this area since the rocket is of a new design created by the 4-H member. The 4-H member should contact the Aerospace Leader if they have any question as to what motor(s) to use in their new design.
4. All rockets in grades 3-8 must have a minimum diameter airframe (body tube) of .9 inches (approximately equivalent to Estes BT-50 body tube), and must have a motor mount (including a motor hook or motor retaining system) that you assemble and install in the airframe. Information regarding the airframe diameter of your rocket is on the face card of the kit.
5. Decals **are not** required in grades 3-5; decals **are** required in grades 6-12. Plastic fins either individual or prefabricated fin cans are **not** permitted in grades 3-8.

LEVEL: GRADES 3, 4, 5

Exhibit a rocket of your choice, Estes Skill Level 1 or 2 or one of comparable difficulty, a remote control aircraft, or a drone or exhibit a poster/display board on any topic in the manual using all the county poster rules. Cluster engine rockets that take an engine D or above are not permitted in this level.

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. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly.

LEVEL: GRADES 6, 7, 8

Exhibit rocket of your choice, Estes Skill Level 2 or 3 or one of comparable difficulty, a remote control aircraft, or a drone or a poster/display board on any topic in the manual using all the county poster rules. Cluster engine rockets that take an engine E or above are not permitted in this level.

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. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly.

LEVEL: GRADES 9, 10, 11, 12

Exhibit a rocket of your choice, or Box Kite, or other aerodynamic object of your choice which illustrates principles of flight, Estes Skill Level 3 or above, a remote control aircraft, or a drone or a poster/display board on any topic in the manual using all the county poster rules. Rockets that take an engine G or above are not permitted in this level.

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. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly.

AEROSPACE POSTER GUIDELINES:

POSTER REQUIREMENTS

See general poster guidelines and requirements

GRADES 3-5

Grade 3: Model Rocket Parts poster

The poster is to be made using, but not limited to, the material about model rocket parts, available from the County Extension Office. See AB-01 for details

Grade 4: Model Rocket Flight poster

The poster is to be made using, but not limited to, the material about launch procedures and flying, available from the County Extension Office. See AB-07 for details.

Grade 5: Aerospace poster

Create a poster describing some aspect of rocketry, space flight or exploration, etc. The poster topic could be on design, construction, flight, stability, aviation history, or any aerospace topic the 4-H'er might have an interest in.

GRADES 6-8

Grades 6-7: Aerospace poster

Create a poster describing some aspect of rocketry, space flight or exploration, etc. The poster topic could be on design, construction, flight, stability, aviation history, or any aerospace topic the 4-H'er might have an interest in.

Grade 8: Scratch Built Model Rocket poster

Create a poster illustrating the steps for creating a new model rocket design and how to test it for stability. See the Aerospace Bulletin listed for grade 8 construction.

GRADES 9-12

Create a poster describing some aspect of model, mid, or high-powered rocketry, aeronautics, space flight or exploration, etc. The poster topic could be, but not limited to, the following; design, construction, flight, stability, aviation history, or any other area of aerospace that the 4-H'er might have an interest.

STATE FAIR ENTRY: one rocket, remote control aircraft, or drone and one poster from each level. Thus each county could send a maximum of 6 exhibits to the state fair, 3 rockets, remote control aircrafts, or drones as well as 3 posters. All posters, notebooks, and display boards must include a reference list indicating where information was obtained, giving credit to the original author. 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. No "Ready to fly" or E2X rockets will be accepted. Remote control aircraft or drones may be constructed from a kit or purchased ready-to-fly.