

AEROSPACE

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.

Levels:

<u>Stage 2</u>	Grades 3 – 5
<u>Stage 3</u>	Grades 6 – 8
<u>Stage 4</u>	Grades 9 – 12

Project Guidelines:

- Complete a minimum of three (3) new activities (regular or optional) each year.
- Complete a minimum of one (1) new learning experience each year.
- Complete the Record Sheet and have it signed by your club leader.
- If your records are incomplete, you will NOT be considered for a Champion and you will NOT be considered for State Fair.
- 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 or through your club leader.

Exhibit Requirements:

<u>BOOK</u>	<u>SUGGESTED GRADE LEVEL</u>	<u>EXHIBIT REQUIREMENTS</u>
Stage 2	3 – 5 1, 2, or	Rocket of your choice, Estes Skill Level 3 or comparable difficulty. OR A poster, display board on any topic in the manual (i.e., construct a paper airplane poster board explaining why you designed it the way you did).
Stage 3 your	6 – 8	Rocket or other aerodynamic object of choice, Estes Skill Level 2, 3, or 4 or comparable difficulty. OR A poster, display board on any topic in the manual (i.e., glider plane (page 18) with poster explaining design).
Stage 4	9 – 12	Rocket of your choice, box kite or other aerodynamic object of your choice which illustrates principles of flight. Note: Rockets must be a skill level 2 or higher. OR A poster, display board on any topic in the manual (i.e., box kite (page 20) with poster explanation).

NOTE: No engines should be included in rockets.

OPTIONAL: A rocket launch is held during 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, exhibits will not be released for launching. You must inform project leader at check-in if you wish to participate in the launch.

Suggestions for your exhibit:

- Read the directions all the way through before starting your project.
- 4-H'ers in level 1 may want to use an easy to assemble rocket with plastic fins and pre-painted body tube. More experienced aerospace participants should choose a more difficult project.
- Do not try anything too difficult for your ability. Master each level before going on to the next. There are many things you can do, ex. kit bashing (using parts from more than one kit) or changing the size or shape of the fins or tubes (keep in mind that the rocket must be flyable).
- Make sure fins are straight and tightly attached. Do not over glue (make sure glue does not get on the body tube or fins) and make sure you do not have glue bubbles or holes at the places where fins and launch lug(s) are attached.
- Even if the rocket is already painted, paint the body tube and/or fins and nose cone if possible. Use spray paint with a length-wise motion (end to end). Stay at least 15 inches away from the rocket and use thin coats (too close or too heavy gets bubbly, mottled look).
- A smooth look is what you want. This means you sand and prime, sand and prime on wood parts and use spackling or other filler on body tubes and cardstock. Be sure to trim away flashing from plastic parts and sand until smooth.
- Make sure air bubbles are out of stickers and decals. If there are no decals with the kit and you would like to use some, you may find them in other kits you have at home, in car model kits or bought at the hobby store.
- Make sure launch lugs are lined up properly and engine mounts are fixed.
- Make sure your shock cord is attached to the nose cone and the body tube (unless your instructions are different).
- Make sure there is wadding in the body tube and that the parachute is properly packed.
- Ask your parents or aerospace junior leader or project leader for help if you don't know what to do.

State Fair:

Each county is permitted to send one (1) rocket and one (1) poster/display board in each grade category (3 – 5, 6 – 8, and 9 -12). Thus each county could send a maximum of six (6) exhibits to the State Fair, three (3) rockets and three (3) poster/display boards.