

DEPARTMENT H - ENGINEERING

Sarpy County Fair Co-Superintendents:

Deb Albright

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Junior Superintendents:

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4-H Staff Person Responsible – John Kilpatrick

Department H - Engineering Division 850 - Aerospace/Rocketry

General Information:

Premiums in Rocketry are pay level 5.

1. Rockets must be supported substantially to protect the rocket from breakage.
2. Rockets are to be mounted on a base that has dimensions equal or less than 12" x 12" and the base should be 3/4" thick. No metal bases. If the rocket fins extend beyond the edges of the required base (12" x 12"), then construct a base that is large enough to protect the fins. The base size is dictated by the size of the rocket fins.
3. The rockets must be mounted vertically. Please do not attach sideboards or backdrops to the displays. In addition a used engine or length of dowel pin is to be glued and/or screwed into the board and extended up into the rockets engine mount to give added stability.
4. Rockets must be equipped as prepared for launching, with wadding and parachute or other recovery system.
5. Rockets entered with live engines, wrong base size or sideboards will be disqualified.
6. A report, protected in a clear plastic cover, must include:
 - a. rocket specification
 - b. a flight record for each launching (weather, distance, flight height),
 - c. number of launchings, and
 - d. flight pictures.

* The flight record should describe engine used, what the rocket did in flight and recovery success. Points will not be deducted for launching, flight or recovery failures described. This includes any damage that may show on the rocket.
7. Complete factory assembled rockets (i.e., plastic fins) will not be accepted at the State Fair. Judging is based upon display appearance, rocket appearance, workmanship, design or capabilities for flight, and number of times launched.
8. Three launches are required to earn the 25 launch points given on the score sheets.
9. For scoring for the State Fair, only actual launches count, misfires will not count towards one of the required three launches. For self designed rockets only, please include a VHS

tape or digital recorded copy of one flight. In the documentation please include a description of stability testing before the rocket was flown.

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LIFT OFF – UNIT 2

CLASS 1 ROCKET

Any Skill Level 2 Rocket with wooden fins painted by hand or air brush.

CLASS 2 DISPLAY

Display exemplifying one of the principles learned in the Lift Off project. Examples include: display of rocket parts and purpose, interview of someone in the aerospace field, or kite terminology. Display can be any size up to 28" by 22".

CLASS 3 ROCKET

Any Skill Level 2 Rocket with wooden fins painted using commercial application example commercial spray paint

REACHING NEW HEIGHTS - UNIT 3

CLASS 5 ROCKET

Any Skill Level 3 Rocket with wooden fins painted by hand or air brush. .

CLASS 6 DISPLAY

Display exemplifying one of the principles learned in the Reaching New Heights Project. Examples include: airplane instrumentation, kite flying, or radio-controlled planes. Display can be any size up to 28" by 22".

CLASS 7 ROCKET

Any Skill Level 3 Rocket with wooden fins painted using commercial application example commercial spray paint.

PILOT IN COMMAND - UNIT 4

CLASS 10 ROCKET

Any Skill Level 4 Rocket with wooden fins or any self designed rocket.

CLASS 11 DISPLAY

Display exemplifying one of the principles learned in the Pilot in Command Project. Examples include: flying lessons, or careers in aerospace. Display can be any size up to 28" by 22".

*** FOLLOWING CLASSES ARE NOT ELIGIBLE FOR STATE FAIR CONSIDERATION***

CLASS 901* SPACE STATION

Draw a design of what you think an International space station of the future might look like. Using household items, build a model of that station. On one sheet of paper briefly describe how scientists would use your space station.

CLASS 902* SPACE BUGGY

Design and make a spacecraft from household items or items that could be reused instead of being thrown away. Materials list: scissors, glue assorted clean household items such as; paper towel tubes, tissue boxes, plastic bottles, etc. Draw a picture of your buggy on a sheet of paper. On a separate sheet of paper briefly explain the job/jobs your space buggy can perform.

CLASS 903* ROCKET

Any skill level 1 rocket with wooden fins.

CLASS 904* ROCKET

Any skill level rocket with plastic fins.

Class 916* Open Field Contest - (Tuesday, July 21, 2009.)

The contest will begin at 1:30 p.m. and run for approximately 2 hours. This contest will be held in **A NEW LOCATION!!!!** 1100 West Lincoln Road in a large field that is a.k.a. "the old driving range".

Rockets will be judged on: launching ability, flight, and recovery process. Safety will be very important in judging.

1. 4-H'ers can only enter one rocket in the launch contest.
2. 4-H'ers can enter a rocket to be judged in Classes 111- 116 and not launch that rocket in the launch contest.

Again this event will be held at **1100 West Lincoln Road in a large field that is a.k.a. "the old driving range"**.

The 4-H office will provide a launch pad and the launch controller. You need to bring everything else that you will need for a safe and successful flight. We will begin launching at 1:30 p.m. Hope to see you there.