

2022 4-H Rocket Exhibit Information

This document supersedes and replaces all previous revisions of the form.



Please complete this form and glue to a 10 X 13 envelope. Place plans, pages of photos, & other required documentation inside the envelope.

NAME: _____ COUNTY or DISTRICT: _____

YEARS IN _____ YEARS AT COUNTY FAIR _____ 4-H

PROJECT: _____ EXHIBITING ROCKETRY: _____ AGE: _____

CLUB: _____

TYPE: Kit Original Design Scale Model MPR HPR Model

Original designs, add at least 1 written page documenting stability: YES Does Not Apply

High Power (HPR)/Mid-power Rockets (MPR) additional form(s) included: YES Does Not Apply

Name of Rocket: _____ Skill Level: _____

Launch Data:

Weather Conditions: _____

(Example: Clear, Cloudy, South wind, etc.)

Is the wind speed greater than 20 Miles per Hour: YES NO

(Entire Trees Move back and forth)

Is a burn ban in effect for the county you will launch in: YES NO

(If so do not launch your rocket)

Did your rocket have flight damage: YES NO

(If so, on a separate page, document & include photo(s))

Did you make changes to your rocket which are not part of the plans: YES NO

(If so, on a separate page, document the modifications and swing test results)

Launch Date: _____ Engine Size used to launch: _____

(Example: B6-2)

Altitude Achieved when you launched _____ (Feet or Meters)

(Visit <https://www.STEM4KS.com/rocketry/> for a simple altitude tracker)

Example: 750 ft.

Explain how you measured the altitude (include additional pages if needed).

Explain in 1 - 5 sentences your construction experiences this year in rocketry.

I have complied with the rules that set forth by the NAR for building and launching the rocket I am exhibiting.

Members Signature: _____

This information can be found at your County Extension Office, <http://www.nar.org>, or <http://www.STEM4KS.com/rocketry/>

Check off each item as you prepare your rocket for the fair. Either place completed list inside of envelope OR keep at home. (*This list has no impact on judging and does not need included in the packet.*)

- Read the fair rules
- At least one page of pictures and no more than five pages. (one side only)
- Plans for the rocket (or copy) included.
- Measured the altitude (**NO estimating**)
- No more than one 'D' engine (2 'C's, 4 'B's, 8 'A's) without a NAR or Tripoli membership.
- NO Engines or igniters (in the rocket or as part of the display)
- NO launch pads
- Contact the FAA **IF** the rocket weighs more than one pound (453 grams) at liftoff or has more than four ounces (113 grams) of propellant; per:
CFR Title 14 → Chapter I → Subchapter F → Part 101 → §101.27 “ATC notification for all launches” http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=14:2.0.1.3.15#se14.2.101_127
- Act safely.
- Have fun!

NAR Model Rocket Safety Code

Effective August 2012

1. **Materials.** I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
2. **Motors.** I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.
3. **Ignition System.** I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the “off” position when released.
4. **Misfires.** If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher’s safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.
5. **Launch Safety.** I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.
6. **Launcher.** I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor’s exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.
7. **Size.** My model rocket will not weigh more than 1,500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.
8. **Flight Safety.** I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.
9. **Launch Site.** I will launch my rocket outdoors, in an open area at least as large as shown in [the accompanying table](#), and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.
10. **Recovery System.** I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
11. **Recovery Safety.** I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

LAUNCH SITE DIMENSIONS		
Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00–1.25	1/4A, 1/2A	50
1.26–2.50	A	100
2.51–5.00	B	200
5.01–10.00	C	400
10.01–20.00	D	500
20.01–40.00	E	1,000
40.01–80.00	F	1,000
80.01–160.00	G	1,000
160.01–320.00	Two Gs	1,500

Revision of August, 2012

Revised 2022 Kansas 4-H Model Rocket Judging Score Sheet

Exhibitor: _____ Class: 5520 5521 5525 5526 5527 5530 5535
 1=Excellent 2=Good 3=Fair 4 = Shows 5 = Needs NA= Not Applicable
 Promise Improvement

General Exhibit Requirements:

Appropriate skill level for age	1	2	3	4	5	NA
No engines or igniters [§ C.13-16]	1					DQ
Display stand less than 8" X 8" X 4 1/4" or stands unassisted [§C.7; E.2; H/MPR9]	1	2	3	4	5	NA
Sturdy support rod not extending past the tip of the nose cone [§ C.7.b; E.2; E.3]	1	2	3	4	5	NA
No pre-finished fins [§ D.2-3]	1				5	NA
No Safety Violations Noted [§ C.8; C.18; A.8; E.4]	1	2	3	4	5	DQ

Report:

Exhibitor information form completed and signed [§ C.4]	1	2	3	4	5	NA
Includes Photo(s) (can have up to 5 pages) [§ C.6]	1	2	3	4	5	NA
Includes Plans [§ C.5]	1				5	NA
Written documentation of flight damage (if any) [§ C.11]	1	2	3	4	5	NA
Documented modifications (if any) [§ D.17]	1	2	3	4	5	NA
Altitude measurement described (computer program, altimeter, etc.) [§ C.10]	1	2	3	4	5	NA
Rocket has been flown (staged rockets need only fly the upper stage) [§ C.17]	1				5	NA
Burn ban in effect [§ A.8]	1				5	NA

Construction:

Fins attached within +/- 2° variation [§ D.4]	1	2	3	4	5	NA
Wooden parts sanded smooth [§ D.6]	1	2	3	4	5	NA
Fin edges rounded or streamlined per instructions to reduce drag [§ D.5] (If instructions say to leave flat = NA) (<i>Rounding all edges is not required</i>)	1	2	3	4	5	NA
Launch lug(s) aligned properly and glued firmly [§ D.7]	1	2	3	4	5	NA
Fins and Launch Lug(s) filleted for strength [§ D.7]	1	2	3	4	5	NA
Nose cone snug but not too tight [§ D.11]	1	2	3	4	5	NA
Plastic part(s) seams sanded smooth [§ D.9]	1	2	3	4	5	NA
Body grooves filled [§ D.6]	1	2	3	4	5	NA
Shock cord and recovery system attached [§ C.9]	1	2	3	4	5	DQ
Engine Mounts [§ D.8]	1	2	3	4	5	NA

Finishing Quality:

Wooden and paper parts sealed prior to painting [§ D.6]	1	2	3	4	5	NA
Paint smooth and uniform [§ D.12]	1	2	3	4	5	NA
Decals applied smoothly [§ D.12]	1	2	3	4	5	NA
If scale model division, correct paint scheme and finished to plans (otherwise NA) See NAR Pink Book for definition [§ D.14-16]	1	2	3	4	5	NA

Scratch Built / Original Design: [§ F]

Design is original, not merely a modification of an existing kit [§ F.1]	1	2	3	4	5	DQ
Written description of preflight stability testing [§ F.6]	1	2	3	4	5	DQ
Rocket swing tested prior to flight & flight(s) indicate stable design [§ F.5; D.17]	1	2	3	4	5	-2R
Includes detailed instructions [§ F.3-4]	1	2	3	4	5	DQ

High/Mid Power (2 'D' engines or above): [§ B.3; B.4; HPRG; MPRG]

High & Mid Power Information Form completed [§H/MPRG.3]	1	2	3	4	5	DQ
Older than 14 years of age [§H/MPRG.1]	1	2	3	4	5	DQ
Has NAR or Tripoli membership (and working on or holds Level 1 cert or TMP if applicable). [§H/MPRG.4]	1	2	3	4	5	DQ
Includes copy of waiver if applicable [§H/MPRG.8]	1	2	3	4	5	DQ
MPR Flown with 2x'D's to 'G' engine [§ MPGR.7]						
HPR Flown on with a 'H' or 'I' engine [§ HPGR.7]	1	2	3	4	5	DQ
No Safety Violations Noted [§ C.18]	1	2	3	4	5	DQ

Placing: Purple Blue Red White Disqualified

This document supersedes and replaces all previous revisions of this form.

The § symbol refers to the section in the KSF Rocketry Rules for the score sheet item.

HPGR/MPGR (H/MPRG) refers to the High and Mid Power Rocketry Guidelines sections of the KSF Rocketry Rules, respectively

Example: [§ C.13-16] refers to section C subsection 13 through 16 in the KSF Rocketry Rules