

DEPARTMENT 123

SECTION B

ROCKETRY

- Open to 4-H and FFA members only.
- A member may exhibit two rockets but only one entry per class.
- No live engines.

	AWARD	1 ST	2 ND	3 RD	4 TH	5 TH	
CLASS	DESCRIPTIONS	PREMIUMS	\$5.00	\$4.50	\$4.00	\$3.00	\$2.00
1.	Skill Level I – Age 8-11						
2.	Skill Level I – Age 12 and over						
3.	Skill Level II – Age 8-11						
4.	Skill Level II – Age 12 and over						
5.	Skill Level III – Age 8-11						
6.	Skill Level III – Age 12 and over						
7.	Skill Level IV – Age 8-11						
8.	Skill Level IV – Age 12 and over						
9.	Skill Level V – limited to third year and older project members						
10.	Original Design – limited to third year and older project members						
	Bottle Rocket – Display						
	Bottle Rockets are to be designed using only 2-liter bottles described in the “4-H Rockets Away” Booklet.						
	<ul style="list-style-type: none"> • To be eligible for altitude and accuracy classes, rockets must have been exhibited in a construction class. • Members must be present to launch rocket and need to provide appropriate type engine. • Member may only enter one altitude class. • Altitude and accuracy will be evaluated with one launch. 						
11.	Bottle Rocket Display, age 8-11						
12.	Bottle Rocket Display, age 12 and over						
20.	Greatest Altitude – A, B Engine						
21.	Greatest Altitude – C, D Engine						
22.	Greatest Altitude – E, F Engine						
23.	Accuracy – Age 8-11						
24.	Accuracy – Age 12 and over						
25.	Bottle Rocket – launch						
26.	Space Buggy with a description of how the design would be appropriate for space use						
27.	Altitude Tracker with explanation of how to find altitude from calculations						
	<u>Kites</u>						
	<ul style="list-style-type: none"> • Judged on construction and originality. • Not kits or models 						
28.	Diamond Kite						
29.	Nagasaki Kite						
30.	Box Kite						
35.	Bottle Rocket -Cloverbud Display					RIBBON	
36.	Bottle Rocket Launch-Cloverbud					RIBBON	

DEPARTMENT 123
SECTION C
ROBOTICS PROJECTS

- Open to 4-H members only.
- A member may enter a maximum of 3 classes plus a poster.
- Classes 1-9 reflect the activities in the Junk Drawer Robotics 4-H project.
- Junk Drawer 4-H Notebook must accompany entries.
- Classes will be judged on design, functionality, and durability.
- Members must be present to demonstrate their project at 10 a.m. in the Show Arena on the first Saturday of the fair.

	AWARD	1st	2nd	3rd	4th	5th	
CLASS	DESCRIPTIONS	PREMIUMS	5.00	4.50	4.00	3.00	2.00
	Level 1: Junk Drawer Robotics- All classes reflect the activities in this 4H project. Classes will be judged on design, functionality, and durability. Member must be present to demonstrate their project at the above designated place and time.						
1.	Marshmallow Catapult (Activity E)						
2.	Robotic Arm (I)						
3.	Pneumatic Arm (Q)						
	Level 2: Junk Drawer Robotics- All classes reflect the activities in this 4H project. Classes will be judged on design, functionality, and durability. Member must be present to demonstrate their project at the above designated place and time.						
4.	Clipmobile (C)						
5.	Can-Can Robot (H)						
6.	Es-Car-Go Robot (N)						
	Level 3: Junk Drawer Robotics- All classes reflect the activities in this 4H project. Classes will be judged on design, functionality, and durability. Member must be present to demonstrate their project at the above designated place and time.						
7.	Double Pole Throw with Switch (E)						
8.	Wall Follower Robot (J)						
9.	Design A Robot To Do A Specific Task (T) (Task identified on entry card & displayed with robot.)						
	POSTERS: To be no larger than 14”X22”, depicting some aspect from the 4-H Virtual Robotics Project.						
10.	Ages 8-11						
11.	Ages 12-15						
12.	Ages 16-18						
13.	Club Exhibit: Displaying How Robots Function In Our World						

DEPARTMENT 123
SECTION D
ENGINEERING PROJECTS

	AWARD	1 ST	2 ND	3 RD	4 TH	5 TH	
CLASS	DESCRIPTIONS	PREMIUMS	\$5.00	\$4.50	\$4.00	\$3.00	\$2.00
	<u>Electricity</u>						
1.	Any article made in “Magic of Electricity”						
2.	Any article made in “Investigating Electricity”						
3.	Any article made in “Wired for Power”						
4.	Any display demonstrating an aspect of the Unit 4 Electric curriculum						
	<u>Woodworking Projects</u>						
	Small item (All dimensions are to be 15” or under)						
5.	Ages 8-9						
6.	Ages 10-11						
7.	Ages 12-13						
8.	Ages 14-16						
9.	Ages 17-19						
	Large item (All dimensions over 15 inches)						
10.	Ages 8-9						
11.	Ages 10-11						
12.	Ages 12-13						
13.	Ages 14-16						
14.	Ages 17-19						
	For the Experienced Woodcrafter						
15.	Item made with wood combined with other media						
	Small Engines						
16.	Exhibit displaying small engines						
		\$10	\$8	\$6	\$4	\$3	
20.	Refurbished AG Equipment with description of work done attached						
21.	Engine Overhaul with description of work done attached						
	Tractors	\$5.00	\$4.50	\$4.00	\$3.00	\$2.00	
24.	Poster or exhibit displaying safety with tractors (age 8-13)						
25.	Poster or exhibit displaying the history of the tractor (age 8-13)						
	Bicycle Adventures	Ribbons (1st – 5th Place)					
26.	Poster depicting helmet safety						
27.	Poster depicting anatomy of a bike						
28.	Special Needs (includes Dept. 123 Sect.A and Dept. 123, Sect. B) – Leader’s signature required on entry form						
	Self-Determined Engineering Lego Design: The design will be judged on originality , stability, moveable parts (if present), design and degree of difficulty for age of exhibitor. Size limitation: 150 square inches, must be displayed on a stable base of wood, heavy cardboard, or other building material.	\$4.00	\$3.50	\$3.00	\$2.50	\$2.00	
29.	Ages 8 –10						
30.	Ages 11 – 12						
31.	Ages 13 - 19						