

2024
DEPARTMENT 24
JUNIOR CLASS MECHANICAL PROJECTS
PREMIUM LIST

Supt. Ralph Jannene

- A. All exhibits will be judged face-to-face, Monday of Fair, from noon to 7 p.m. with a break at 3:30 p.m. The Youth Building will be open at 11:00 a.m. Numbers will be available at 11:45 a.m. After judging is finished, the building will close. Judging will take place in the 4-H Youth Building.
- B. A maximum of three (3) different entries per exhibitor, **per division will be allowed**, but not more than one exhibit per entry number.
- C. All posters may be no larger than 14" x 22" and all display boards may be no larger than 36" x 36" unless otherwise stated or the entry will be dropped one place.

Division 1 – Automotive

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.50 Red - \$2.25 White - \$2.00 Pink - \$1.75

Class No.	Entry
1	Scrapbook on the History of the Auto Industry
2	Any part of the Brake System mounted on a display board with parts identified. Attach an explanation of how the system works.
3	Any part of the Ignition System mounted on a display board with parts identified. Attach an explanation of how the system works.
4	Any other part of the Auto mounted on display board with parts identified.
5	Poster showing Operational Costs of your Family Car

Division 2 – Small Engines

Open to members enrolled in **4-Cycle Engines**

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Display board exhibit of Small Engine Parts with Identification of Parts to be mounted on display board.
2	Poster illustrating steps in a Small Engine Service Job
3	Poster showing correct steps in Preparing a Small Engine for Off-Season Storage
4	Small Engines Safety Poster
5	Poster showing events of a 4-Cycle Engine
6	Display board showing either an Ignition System, Fuel System, or Lubrication System – actual parts may be used
7	Poster showing the steps to Repair or Rebuild an Engine Accompanied by a log of the following: <ul style="list-style-type: none"> A. What was Done B. Parts Replaced C. Cost D. How the Engine Ran before and after the Repair E. What was Learned

Division 3 – Small Engines

Open to members enrolled in **2-Cycle Engines**

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Poster illustrating steps in Small Engine Service
2	Display board showing diagrams of the Ignition, Fuel, or Lubrication Systems (actual parts may be used).
3	Display board showing Worn or Faulty Engine Parts with statements as to cause and prevention
4	Poster showing events in a 2-Cycle Engine with brief explanation – Maximum Size: 14" x 22"
5	Small Engine Safety Poster – Maximum Size: 14" x 22"
6	Display board showing either an Ignition System, Fuel System, or Lubrication System (actual parts may be used)
7	Poster showing the steps to Repair or Rebuild an Engine accompanied by a log of the following: A. What was done B. Parts Replaced C. Cost D. How the Engine ran before and after the Repair E. What was Learned

Division 4 – General Small Engines

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Poster showing the impact of Small Engines on the Environment
2	Poster or display board showing Small Engine Tools and their Usage
3	Poster showing the History of Small Engines
4	Poster explaining how to Troubleshoot a Small Engine

Division 5 – Bicycle Safety

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Poster showing a Safety Hazard
2	Scrapbook on how your Bicycle Works and How to Care for It
3	Scrapbook on Safe Bicycle Riding Suggestions
4	Any other Bicycle Safety Poster
5	Any other exhibit not listed above

Division 6 – Snowmobiles

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Snowmobile Safety Poster
2	Display board exhibit of Snowmobile Parts with Identification

Division 7 – Aerospace

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

UNIT I – MODEL AIRPLANE

Class No.	Entry
1	Airplane Model – Any Type
2	Poster with Basic Parts of Aircraft
3	Poster on History of Flight
4	Helicopter Model – Any Media
5	Hot Air Balloon Model – Any Media
6	Poster on Model Airplane Safety
7	Any Other Exhibit not Listed Above

UNIT II – MODEL ROCKETRY

Class No.	Entry
8	Poster Showing Parts of a Rocket
9	Model of Rocket (Kit)
10	Model of Rocket (Homemade)
11	Non-Metallic Model that exhibitor has Built and Flown (include flight information)
12	A Log Book detailing the Launch, Size, Style, and Weight of a Rocket
13	Any Other Exhibit not Listed Above

UNIT III – FLYING (AEROSPACE)

Class No.	Entry
14	Poster on Aircraft Propulsion
15	Poster with Photos Showing type of Aircraft with their Descriptions
16	Any other Exhibit not Listed Above

Division 8 – Handyman Project

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.
For all entries attach a statement to the entry as to the type of work done and the method used.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Repaired Item
2	Refinished Item
3	Constructed Item
4	Repurposed Item
5	Any Welded Item

Division 9 – Welding

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.50 Red - \$2.25 White - \$2.00 Pink - \$1.75

Class No.	Entry
1	Any Welded Item – First Entry
2	Any Welded Item – Second Entry
3	Any Welded Item – Third Entry
4	Repaired Article with Before & After Pictures
5	Poster of Welding Safety, Different Types of Welding, etc
6	Any Hand-Forged Item

Division 10 – STEM (Science, Technology, Engineering, and Mathematics)

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.50 Red - \$2.25 White - \$2.00 Pink - \$1.75

Class No.	Entry
1	CNC Item (Original Design)
2	3-D Printed Item (Original Design)
3	Rube Goldberg Machine (Max base size 24" x 24")
4	Any Other STEM Related Project

Division 11 – Tractor Maintenance

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.50 Red - \$2.25 White - \$2.00 Pink - \$1.75

Class No.	Entry
1	Drawing, Poster, or Display illustrating, identifying part of, and explaining the function of one Tractor Engine Component such as spark plug, carburetor, etc or an engine as a whole
2	Mounted exhibit or worn tractor engine parts caused by Poor Tractor Maintenance which was collected by exhibitor. Include an explanation of cause and how to prevent it.
3	Display on board no larger than 36" x 36" and properly label different kinds of nuts, bolts, screws, washers, and other fasteners used on farm machinery.
4	Diorama or Poster showing a dangerous tractor or farm machinery situation while explaining how to prevent it.
5	Poster on Tractor, Farm Machinery, General Farm Safety, Fuels or Lubricants
6	Poster or Display on Types and / or Functions of Tractor Systems
7	Poster on Hand Signals used for Tractors and other Farm Machinery
8	Display or Poster Illustrating the History of Tractors
9	Refurbished Tractor (Displayed outside the Youth Building)

Division 12 – Models & Model Railroad Rules

- A. A maximum of three (3) different entries per exhibitor. One exhibit per entry number.
- B. Kits may be used but you must label your model "Kit Used" or "Original Model" (Original Model indicates that no kit was used in any way).
- C. Model display must be one unit. Be sure the model and all other objects are securely fastened. The maximum diorama and model railroad display base size is 24" x 24". **The exhibits must be on a sturdy wooden base.**
- D. No snap-together models will be accepted.
- E. All model parts must be painted unless otherwise stated.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	2-Wheeled Vehicle
2	4-Wheeled Vehicle
3	Water Vehicle
4	Military Vehicle
5	Flying Vehicle
6	Any Model – NOT a Kit
7	Any Motorized / Remote Powered Model
8	Poster of Model Railroad Setup (Max Size 14" x 22")
9	Model Railroad Building
10	Model Railroad Display (Max base size 24" x 24")
11	Dioramas (i.e. farm, city, airport scene, etc) (Max base size 4 Sq Feet – i.e. 3'x1' or 2'x2')

Division 13 – Remote Control (RC) Items

- A. A maximum of three (3) different entries per exhibitor. One exhibit per entry number.
- B. Poster size not to exceed 14"x 22".
- C. Remote Control Items (Cars, Boats, Robots, etc.)

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Video
2	Poster or Display focused on some aspect of RC Vehicle
3	In-Person Demo
4	Self-Painted RC Vehicle with Before & After Pictures
5	Project involving a Drone

Division 14 – Legos

Maximum size of all display bases is 18" x 18".

All exhibits must be mounted on a sturdy wooden base or the exhibit will be dropped one (1) place. This is for the safety of the exhibitor's project during handling. The Lego base alone is NOT acceptable.

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Lego Display (i.e. Landscape, Village, Scene, etc)
2	Free Standing Lego creation built without instructions (NOT a kit)
3	Lego Display from a Kit (exhibit must be marked as such)
4	Any Other Building Material (NOT Legos) such as k'nex, magnetix, erector, Lincoln logs, etc.
5	Any Other Lego Project

Division 15 – Robotics

Exhibitor must demonstrate working robot skills to the judge with in person demo. Exhibitor may also provide a video with additional robot skills.

A maximum of three (3) different entries per exhibitor. One exhibit per entry number.

Blue - \$2.00 Red - \$1.75 White - \$1.50 Pink - \$1.25

Class No.	Entry
1	Robot from Kit (exhibit must be marked as such)
2	Robot Designed and Built by Exhibitor
3	Robot Designed and Programmed by Exhibitor
4	Robot Gripper Designed and Built by Exhibitor
5	Any Other Robot not Listed