

## DEPARTMENT 24 JUNIOR CLASS MECHANICAL PROJECTS

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 - \$1.50

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 - \$1.75      Red - \$1.50      White - \$1.25      Pink - \$1.00

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"> <li>A. What was Done</li> <li>B. Parts Replaced</li> <li>C. Cost</li> <li>D. How the Engine Ran before and after the Repair</li> <li>E. What was Learned</li> </ul>

### 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.

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**

<b>Class No.</b>	<b>Entry</b>
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**

<b>Class No.</b>	<b>Entry</b>
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)**

<b>Class No.</b>	<b>Entry</b>
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

<b>Class No.</b>	<b>Entry</b>
1	Repaired, Refinished, or Constructed Article for use in the Workshop
2	Repaired, Refinished, or Constructed Article for Sport or Recreation Purposes
3	Repaired, Refinished, or Constructed Article for use in the Home
4	Repaired, Refinished, or Constructed Article for use Out-of-Doors
5	Repaired, Refinished, or Constructed Article used in the Agricultural Industry

### Division 9 – Tractor Operators

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

Blue - \$2.50      Red - \$2.25      White - \$2.00      Pink - \$1.50

Class No.	Entry
1	Junior Tractor Operators (Grades 6 – 8 and enrolled in Tractor Project)
2	Senior Tractor Operators (Grades 9 – 13 and enrolled in Tractor Project)

The **RURAL INSURANCE COMPANIES** will provide an award to the top operator.

### Division 10 – Tractor Maintenance

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

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 pressed board 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

### Division 11 – 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")

<b>11</b>	Dioramas (i.e. farm, city, airport scene, etc) (Max base size 24" x 24")
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#### Division 12 – Legos

**Maximum size of all display bases is 18" x 18". All exhibits must be mounted on a sturdy wooden base.**

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
<b>1</b>	Lego Display (i.e. Landscape, Village, Scene, etc)
<b>2</b>	Free Standing Lego creation built without instructions (NOT a kit)
<b>3</b>	Lego Display from a Kit (exhibit must be marked as such)
<b>4</b>	Any Other Building Material (NOT Legos) such as k'nex, magnetix, erector, Lincoln logs, etc.

#### Division 13 – Robotics

Exhibitor must demonstrate working robot skills to the judge.

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
<b>1</b>	Robot from Kit (exhibit must be marked as such)
<b>2</b>	Robot Designed and Built by Exhibitor
<b>3</b>	Robot Designed and Programmed by Exhibitor
<b>4</b>	Robot Gripper Designed and Built by Exhibitor