

# JUNIOR MECHANICAL SCIENCES

Department 240

Judging Face to Face on Tuesday

## RULES FOR CLASSES A - C

1. No more than three entries per exhibitor. One exhibit per entry number.
2. County Fair Bicycle Rodeo will be held prior to the County Fair.

### **CLASS A TRACTOR**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any article	<b>2.00</b>	<b>1.75</b>	<b>1.50</b>	<b>1.25</b>
2. Any article				
3. Any article				

### **CLASS B SMALL ENGINES**

(Beginner 1-2 yrs; Intermediate 3-5 yrs; Advanced (6 yrs and more))

<b>Entry No.</b>				<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
				<b>2.00</b>	<b>1.75</b>	<b>1.50</b>	<b>1.25</b>
Beg	Int.	Adv.					
1	4	7	Any article				
2	5	8	Any article				
3	6	9	Any article				

### **CLASS C BICYCLE**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any article	<b>2.25</b>	<b>2.00</b>	<b>1.75</b>	<b>1.50</b>
2. Any article				
3. Any article				
4. County Fair Bicycle Rodeo (13 yrs. and under)				
5. County Fair Bicycle Rodeo (14 yrs. and over)				

## RULES FOR CLASSES D - E

1. No more than three entries per class. One exhibit per entry number.
2. A model constructed of Legos, Construx, Erector or similar toys, or any pre-finished kits shall be disqualified.
3. First year members only may use a snap together kit in all classes, but kits must be fully glued, painted or covered.
4. No partially or totally pre-finished kits.
5. All visible non-moving areas must be completely painted or finished with paint, metal foil, stain, or similar material. Finish must be applied by the member. Factory-applied finishes are not acceptable. Clear areas such as windows, canopies, lights and view ports may be left clear.
6. The use of decals or aircraft nose art must accurately reflect the art on the original being replicated. If the art work is determined to be inappropriate for the Fair by Fair Management, the article will be judged but not displayed.

7. Third year and over are required to have; (planes) full rigging on biplanes, tri-planes and obvious external rigging and wiring on monoplanes (ships) full rigging on all ships (detailing) significant detailing on all models.
8. Dioramas must be no larger than 24" long by 24" wide by 24" high. To qualify for State Fair, dioramas must be no larger than 24" long by 24" wide by 18" high.
9. Displays/dioramas must be one unit. Be sure model and all other objects are securely fastened.
10. Models made of paper/card, etc. should be firmly attached to a foam board or cardboard base except for birds which may be displayed as if in flight. Models such as aircraft or a ship must be free standing.

**Note:**

1. Model airplanes, rockets, kites, and balloons built and judged for flight are entered in CLASS G.
2. Posters, displays, log books, etc. about aviation theory, flight experience, astronomy, space theory are entered in CLASS I.

**CLASS D SCALE MODELS AND MINIATURES**

Entry No.	Blue	Red	White	Pink
1. Any article	2.25	2.00	1.75	1.50
2. Any article				
3. Any article				

**RULES FOR RAILROAD**

1. No more than three entries per class. One exhibit per entry number.
2. All railroad dioramas must include at least 1 of the following elements:
  - a. At least two buildings
  - b. A lake, shoreline, river, stream, pond or other water feature.
  - c. A bridge, trestle or other elevated structure over which track runs.
  - d. A hill, mountain, tunnel, culvert or other elevated or below ground level natural feature.
  - e. A switch, turn-out, roundhouse or other mechanical device to alter direction of travel.
  - f. Artificial lighting or any other electrical powered item.
  - g. A quarry
  - h. A factory, mining, construction site, manufacturing complex, city, town or village, fairgrounds, farm, resort or any other scenery theme area.
  - i. Dioramas must have at least two railroad cars in place, which may be removed after judging.
3. All railroad dioramas must include landscaping including grass where applicable and at least two trees.
4. Individual railroad cars/engines, etc must be shown on a length of track firmly attached to base of wood, foam board, plastic, or rigid cardboard.
5. Computer programs written to control and operate trains must be prepared to demonstrate the working program.
6. Each module must be judged prior to being assembled in with other modules.

## **CLASS E SCALE MODEL RAILROAD**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any article	<b>2.25</b>	<b>2.00</b>	<b>1.75</b>	<b>1.50</b>
2. Any article				
3. Any article				

### **RULES FOR CLASS F**

1. Group diorama consists of at least two modules.
2. Individual modules must be planned and created by exhibitors.
3. Youth exhibitors must assemble group diorama, adult verbal assistance is allowed, but no hands on help is allowed.
4. Only one member of the group should enter entry on entry card. Be sure to list other members of group. Prize money sent to one member and is to be divided equally.
5. Modules must be no larger than 24" long X 24" wide X 18" high.

## **CLASS F GROUP DIORAMA**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Two (2) or more modules, made by two (2) or more members, with a unified theme	<b>3.00</b>	<b>2.75</b>	<b>2.50</b>	<b>2.25</b>

### **AEROSPACE RULES FOR CLASS G**

1. One exhibit per entry number per age class.
2. All entries are judged on the flight, and operation and overall appearance of the rocket. Appearance is judged on the basis of structure, paint and finish. Appearance counts for 33% of the final award given. Entrant will not be penalized for loss of a rocket or aircraft during County event flight.
3. All entries must meet appropriate safety codes of NAR (National Association of Rocketry).
4. All flying model aircraft must meet safety code of the AMA (Academy of Model Aeronautics).
5. Flying model rockets and aircraft will be sent home with the entrant after rocket launch/aircraft flight for cleanup and repair, with the exception of lost or damaged beyond repair rockets/aircraft. Members whose rocket/aircraft was lost or severely damages may bring a substitute to the fair. Launched rockets must be displayed at fair.
6. **Any** rocket engines, fuel, batteries, and other power sources except rubber bands, must be removed before models are brought for display at the fair.
7. The rocket or aircraft flown in Glass G cannot not be used for any other fair entry.
8. All participants in rocket launch will be required to prove required procession of knowledge before safe operation of model rockets.
9. Payload launching rockets may only use a USDA large uncooked egg. No living creatures may be launched.

10. Scratch builders are limited to advanced class. All such models must be built to NAR safety specifications for scratch built rockets. Entrant must present a logbook with all design drawings and calculations at the time of a swing test prior to fair Launch at a time to be agreed to between the entrant and one of the rocket launch coordinates.
11. Entrants will be divided into classes as follows:
  - Cloverbuds** - built rocket.
  - Novice** - Has not flown in two county Rocket Launches within the past three years regardless of age. Must use a single stage rocket with ballistic, streamer or parachute recovery.
  - Intermediate** - Has flown in two County Fair Rocket Launches within the last three years regardless of age. May use any rocket built from a kit with engine limited to E or smaller as listed in instructions.
  - Advanced** - Entered in entry #6, must be 14 years of age and has flown in four fair launches within last five years. May fly any rocket built from a kit or scratch with engine limited to E or smaller as listed in instructions.
12. Judging will be Danish style and is subject to additional published rules or restrictions.
13. Only one rocket will be judged for the actual launch, all other launched rockets must be entered in CLASS H for judging.

Notes:

1. Model airplanes, rockets, kites, and balloons built and not flown (display models) are entered in CLASS D SCALE MODELS AND MINIATURES.
2. Posters about airplanes, rockets, kites, and balloons are entered in CLASS K. OTHER AEROSPACE.
3. Members in rocket launch using a skycam, may take pictures at any prior launch within the 4-H year and enter those under self-determined, enter the rocket in Class H.

**CLASS G AEROSPACE AIRCRAFT**

Entry No.	Blue 2.00	Red 1.75	White 1.50	Pink 1.25
1. Flying Model aircraft - Cloverbuds				
2. Flying Model aircraft - Juniors (ages 13 and younger)				
3. Flying Model aircraft - Seniors (ages 14 and older)				
4. Flying Model launched rocket - Cloverbuds				
5. Flying Model launched rocket- Junior (ages 13 yrs. and under)				
6. Flying Model launched rocket - Senior (ages 14 yrs. and older)				

One 4-H member in Junior and Senior Classes of Launched Rockets will be selected to represent Waukesha County at the State Rocket Launch.

**Maynard Owen Award to Junior and Senior Category Winners**

## Rules for Classes H-J

1. No more than three entries per exhibitor per class. One exhibit per entry number.
2. Aerospace projects deal with the science of flight. All entries are either a poster explaining some principle of aerospace, a poster explaining a real life experience of aerospace, or a working model and a report of it's actual flight. ("Display Models" of airplanes, rockets, etc are entered in Class D Scale Models and Miniatures).
3. All working and flown models will be judged on its flight history, operation knowledge and sound aerospace construction of the model. (Model appearance and neatness are encouraged and are not the focus of these classes). Rockets or aircraft have been flown and not entered in Class G of this current year.
4. All flown model entries must include:
  - a) A 3x5 card or 4x6 card with the flight information: date, time, location, conditions of the flight, flight history and one picture of flight. (Additional notes and photographs of the flight are helpful for judging).
5. All entries must meet appropriate safety codes and any rocket engines, fuel, batteries and other power sources, except rubber bands, must be removed before models are brought for judging and display.
6. The actual model flown must be presented to the judge, put on display at the fair and cannot be used for any other entry. Rockets judged in class G are not eligible.
7. Judging is face to face.

### **CLASS H AEROSPACE AIRCRAFT OR ROCKETS**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any Entry	2.25	2.00	1.75	1.50
2. Any Entry				
3. Any Entry				

### **CLASS I OTHER AEROSPACE**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any Entry	2.25	2.00	1.75	1.50
2. Any Entry				
3. Any Entry				

### **CLASS J RC CARS**

<b>Entry No.</b>	<b>Blue</b>	<b>Red</b>	<b>White</b>	<b>Pink</b>
1. Any Entry	2.25	2.00	1.75	1.50
2. Any Entry				
3. Any Entry				

**Champions One champion ribbon given per class in Dept. 240  
(If Judge so desires) Ribbon Only**