

## **DEPT. 124- JR. MECHANICAL PROJECTS**

**Superintendent - Joe Herther**

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**JUDGING:** Monday, 1:00pm to 7:00pm

Posters 14" x 22"; Display board 18" x 24"

All exhibits in this Dept. **MUST BE CLEAN** of oil and gas.

### **DIVISION A – Tractors**

**Class No. Premiums: \$2.50, \$2.25, \$2.00, \$1.50**

1. Detailed poster/display showing safety procedure to be observed while using at least two types of farm equipment.
2. Display board showing three or more parts of improperly serviced and worn tractor parts.

### **DIVISION B- Small Engines**

**Class No. Premiums: \$2.50, \$2.25, \$2.00, \$1.50**

#### **FOUR CYCLE ENGINES:**

1. Complete small engine, labeling all external parts
2. Complete 4 cycle engine block with all internal parts exposed and labeled
3. Display of repaired or rebuilt engine. The repair of the engine will be documented by keeping a log of: a. what was done; b. parts replaced; c. cost; d. how the engine ran before and after repair; e. what was learned
4. Poster showing the events in a four-cycle engine with brief explanation
5. Poster listing preventative maintenance measures recommended for four-cycle engine

#### **TWO CYCLE ENGINES:**

6. Complete small engine, labeling all external parts
7. Complete 2 cycle engine block with all internal parts exposed and labeled
8. Display of repaired or rebuilt engine. The repair of the engine will be documented by keeping a log of: a. what was done; b. parts replaced; c. cost; d. how the engine ran before and after repair; e. what was learned
9. Poster showing the events in a two-cycle engine with brief explanation
10. Poster listing preventative maintenance measures recommended for two-cycle engine

#### **GENERAL SMALL ENGINE:**

11. Poster showing correct steps in preparing a small engine for off-season storage
12. Small engine safety poster
13. Poster/display of oil cans showing API specifications and an explanation of their meaning
14. Panel exhibit showing diagram of ignition system or fuel system or lubrication system (actual parts may be shown)
15. Display board of carburetor parts with explanation of parts (float type or diaphragm type)
16. Display board showing diagram of fuel system or ignition system (actual parts may be shown)
17. Display board showing worn or faulty parts with statement as to cause and prevention
18. Any other exhibit related to Small Engines not listed above.

### **DIVISION C – Beginning Aerospace/Rocketry (1-2Years)**

(Kits acceptable unless otherwise specified)

**Class No. Premiums: \$2.50, \$2.25, \$2.00, \$1.75**

1. First launched rocket, skill level 1
2. Second launched rocket, skill level 1
3. Unlaunched rocket, skill level 1
4. Exhibit related to aerospace or aeronautics
5. Exhibit related to airplane or airplane pilots
6. Exhibit related to meteorology

### **DIVISION D – Intermediate Aerospace/Rocketry (2-3 Years)**

**Class No. Premiums: \$2.50, \$2.25, \$2.00 \$1.75**

1. First launched rocket, skill level 2-3
2. Second launched rocket, skill level 2-3
3. Unlaunched rocket, skill lever 2-3
4. Exhibit related to aerospace or aeronautics
5. Exhibit related to airplane or airplane pilots
6. Exhibit related to meteorology

### **DIVISION E – Advanced Aerospace/Rocketry (4+ Years)**

**Class No. Premiums: \$2.50, \$2.25, \$2.00, \$1.75**

1. First launched rocket, skill level 3+
2. Second launched rocket, skill level 3+
3. Unlaunched rocket, skill level 3+
4. Third launched rocket, skill level 3+
5. First launched rocket, own design
6. Second launched rocket, own design
7. Third launched rocket, own design
8. Exhibit related to aerospace or aeronautics
9. Exhibit related to airplane or airplane pilots
10. Exhibit related to meteorology

### **DIVISION F-Scale Models**

Four exhibits allowed in this division. Large scale model display exhibits may be dropped off Sunday from 3:00pm - 5:00 pm.

**Class No. Premiums: \$2.00, \$1.75, \$1.50, \$1.25**

1. Car
2. Motorcycle
3. Truck
4. Boat
5. Airplane
6. Spaceship
7. Any other scale model exhibited not listed
8. Model Educational display – (skeleton, etc.)
9. Model made from Legos
10. Model railroad building or display— no larger than 4' x 4'
11. Any other Model/Diorama – no larger than 4' x 4'
12. Lego Display – no larger than 4' x 4'

## DIVISION G- Robotics

**Class No.      Premiums: \$2.00, \$1.75, \$1.50, \$1.25**

1. Exhibit relating to robots
2. Exhibit relating to robots
3. Poster relating to robots