

Department 24 Mechanical Projects

Regular or Danish Judging System

MECHANICAL PROJECT EXHIBITS

1. Exhibitor is required to carry project which he or she is exhibiting in respective youth organization.
2. All posters to be no smaller than 11 x 14" or larger than 14 x 22."

See current rule book for entry due dates, rules, and judging schedule.

Premium Schedule – All Classes: Blue - \$2.50 * Red - \$2.25 * White - \$2.00 * Pink - \$1.75

Class A – Tractor I: Grades 3-4

Lot Numbers, Class A:

1. Project Book A
2. Draw a picture of a tractor and name the parts
3. Self-determined

Class B – Tractor I: Grades 5-6

Lot Numbers, Class B:

1. Project Book B
2. Self-determined

Class C – Getting Acquainted With Your Tractor – Grades 7-9

Lot Numbers, Class C:

1. Periodic lubrication and maintenance chart.
2. Display panel of damaged parts caused by poor tractor maintenance, collected by member, with explanation of cause, and how it could be prevented.
3. Chart or poster with information on proper tractor care and adjustments as they relate to good tractor operation. Examples: spark plugs, batteries, tires, air cleaners, carburetors, etc.
4. Chart following the transmission of power in one piece of machinery. Sketch and further explain where and how the power goes to reach the job.
5. Poster illustrating tractor safety
6. Any self-determined project not listed above

Class D – Assuring Safe and Efficient Tractor Operation – Grades 10+

Lot Numbers, Class D:

1. Periodic lubrication and maintenance chart.
2. Display panel of damaged parts caused by poor tractor maintenance, collected by member, with explanation of cause, and how it could be prevented.
3. Chart or poster with information on proper tractor care and adjustments as they relate to good tractor operation. Examples: spark plugs, batteries, tires, air cleaners, carburetors, etc.
4. Chart following the transmission of power in one piece of machinery. Sketch and further explain where and how the power goes to reach the job.
5. Poster illustrating tractor safety
6. Poster of engine types
7. Safety systems
8. Lubrication and care of tires
9. Any self-determined project not listed above

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Class E – Small Engines

Posters or Models/Parts

Lot Numbers, Class E:

Level One – Crank it Up

1. Parts of a small engine.
2. How to start a small engine.
3. Tools for working with small engines.
4. Engine oil grades.
5. Air filters or cleaners.
6. Cooling systems.
7. Spark plug maintenance.
8. Air cleaner maintenance.
9. Safety labels.
10. Safety rules when using small engines.
11. Comparison of tool prices.
12. Completed member guide (BU8186.)
13. Any self-determined project not listed above.

Level Two – Warm it Up

14. Small engine types.
15. Internal small engine parts.
16. Specialty tools for working with small engines.
17. How to determine engine size.
18. Engine compression.
19. Carburetor adjustments.
20. Steps in disassembling a small engine.
21. Steps in seasoning a small engine.
22. Types of lawn mowers.
23. How to set lawn mower height.
24. Mowing safety rules.
25. Completed member guide (BU8177.)
26. Any self-determined project not above.

Level Three – Tune it Up

27. Diagnostic tool.
28. How to disassemble and assemble an engine's base.
29. Lawn mower maintenance.
30. Engine replacement.
31. Comparison of small engine machine prices.
32. My small engine business plan.
33. Completed member guide (BU8178.)
34. Any self-determined project not above.

Class F - Aerospace

Lot Numbers, Class F:

Model Airplanes

1. Model of homemade airplane – no kits.
2. Model of airplane made from kit only.
3. Poster showing the airport layout in your area.
4. Poster on basic parts of airplanes.
5. Set of 3 different paper airplanes.
6. Set of 2 kites.
7. Any self-determined project not listed above

Model Rocketry

8. Single stage rocket – 3 or 4 fin model.
9. Multi-stage rocket – 2 or 3 stage.
10. Exotic designed rocket.
11. Poster covering basic parts of rockets.
12. Any self-determined project not listed above.

Flying

13. Poster on principles of flight.
14. Poster on the history of flight.
15. Poster on the airplane instrumental panel.
16. Poster on one aspect of air safety.
17. Any self-determined not listed above.

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Class G – Bicycling

Lot Numbers, Class G:

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| 1. Identify bicycle parts. | 5. Comparing tire features. |
| 2. Rules of the road for bicycles. | 6. Completed member guide (BU8335.) |
| 3. Exhibit of five traffic signs. | 7. Any self-determined project not listed above. |
| 4. Completed member guide (BU8334.) | |

Class H – Scale Models

Lot Numbers, Class H:

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| 1. Display of scale model. | 3. Original robot, designed and built by member. |
| 2. Basic Lego tank bot, designed and built by member. | 4. Any self-determined project not above. |

Class I – Metal Only

Lot Numbers, Class I:

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| 1. Useful article for use in farm or home workshop | 4. Article for use in the home |
| 2. Article for use out-of-doors | 5. Toy or homemade game |
| 3. Article for use in storage | 6. Any self-determined project |

Class J - Lego

Lot Numbers, Class J:

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| 1. Display of scale model | 3. Original robot, self designed and built |
| 2. Basic Lego tank bot, self designed and built | 4. Any self-determined project |