

## ELECTRICITY Department 23

**Check-In:** All Classes: Wednesday, 1 - 8 p.m., Exhibition Hall,

**Judging:** All Classes: Exhibition Hall, Thursday, 8:30 am.  
Danish Judging

**Department Chairperson:** Mike Iselin, 608-445-9367

**Superintendents:** Ron Rogers 608-886-2046

**Eligible 4-H Project Areas:** Electricity

**Regulations:**

1. For safety reasons, please inspect your project at home before use at the Fair.
2. Electric plugs must be the "put together" type.

<u>Premiums:</u>	<u>Blue</u>	<u>Red</u>	<u>White</u>	<u>Pink</u>
Class A	\$1.75	\$1.50	\$1.25	\$1
Class B	\$2	\$1.75	\$1.50	\$1.25
Class C	\$2.25	\$2	\$1.75	\$1.50
Class D	\$3	\$2.50	\$2	\$1.50

### CLASS A. Magic of Electricity - Unit 1

- 1) Display of simple switch
- 2) Alternating current display
- 3) Electric question board
- 4) Steady hand tester
- 5) Simple electric attraction and repulsion exhibit  
(Securely attach a 3"x5" card explaining how it works.)
- 6) Simple static electrical generator  
(Securely attach a 3"x5" card explaining how it works.)
- 7) Display showing wiring in a simple circuit
- 8) Display showing closed/open circuits
- 9) Display on conductors
- 10) Display on magnetism
- 11) Display on electrical energy transferred into motion

### CLASS B. Investigating Electricity - Unit 2

- 1) Homemade electric motor
- 2) Display showing a simple step-down transformer  
(Securely attach a 3"x5" card explaining how it works.)
- 3) Display of a simple electromagnet
- 4) Simple homemade buzzer
- 5) Display showing circuit diagrams with explanation
- 6) Example of series circuit with explanation
- 7) Example of parallel circuit with explanation
- 8) Momentary Switch
- 9) Three Way Switch
- 10) Display showing a soldered connection
- 11) Rocket Launcher
- 12) Burglar Alarm

### CLASS C. Wired for Power - Unit 3

- 1) Poster showing five types of lighting with a written explanation of how this is defined
- 2) Diagram or photographs of electrical improvements made at home
- 3) Wiring layout of your home or other building
- 4) Electrical Tool and Supply Kit
- 5) Display of symbols on wires and cables and their meanings
- 6) Constructed or repaired light - duty extension cord  
(Attach a 3"x5" card explaining work performed.)
- 7) Constructed or repaired heavy - duty extension cord  
(Attach a 3"x5" card explaining work performed.)
- 8) Constructed or repaired lamp  
(Attach a 3"x5" card explaining work performed.)
- 9) Display showing how to replace a switch

### CLASS D. World of Electronics - Unit 4

- 1) Display on Soldering Circuit Assembly
- 2) Display on Diodes
- 3) Display on voltage and polarity
- 4) "Blinky" Flasher
- 5) Alarm that activates in the presence of light
- 6) Light Meter
- 7) SCR Intruder Alarm
- 8) 6-8 Watt homemade amplifier with explanation
- 9) 14"x22" poster showing at least 12 common electric symbols

**Special Awards:**

**Miller & Sons Supermarket** - Trophy to Champion and Rosette to Reserved Champion of the designated class.

## MECHANICAL PROJECTS Department 24

**Check-In:** All Classes: Wednesday, 1 - 8 p.m., Exhibition Hall

**Judging:** Exhibition Hall, Thursday, 8:30 a.m., following Electricity. Danish Judging.

**Department Chairperson:** Mike Iselin, 608-445-9367

**Superintendents:** Ron Rogers 608-886-2046

**Eligible 4-H Project Areas:** Rocketry, Bicycling, Engines, Tractors, Aerospace, Geospatial, Robotics, Legos, STEM

**Regulations:**

1. Posters may not exceed 14"x22".
2. Display may not exceed 3'x3'.
3. Model airplanes and rockets must be made from scratch or kit. No snap together kits allowed. Project must be assembled and painted, ready for "show".
4. Rockets and powered airplanes must be painted and ready to fly. No rocket engines or radio control equipment may be exhibited.
5. Skill Levels: Must have level tag from the kit container as skill levels are determined by the level number on the kit.
6. Judge's decision is final.
7. Model airplane and model rocketry exhibitors are also encouraged to enter Class C.
8. Age categories for Junior and Senior Divisions are as follows: Junior - grades 3 - 7 and Senior - grades 8+.
9. All pre-painted, metal models must be entered in Class M, lots 13 or 30.
10. Legos: Any multi-section lego display must be mounted on a board or panel to allow the display to be moved for judging and display. Maximum size is 3' x 3'.

<u>Premiums:</u>	<u>Blue</u>	<u>Red</u>	<u>White</u>	<u>Pink</u>
Class A-B, D-J, L-N	\$2	\$1.75	\$1.50	\$1.25
Class K	\$2.50	\$2.25	\$2	\$1.50
Class C	\$1.75	\$1.50	\$1.25	\$1

### CLASS A. Model Airplanes

**Junior Division Lots**

- | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>Skill Level</u>                                |
|----------|----------|----------|----------|---|
| 1)       | 2)       | 3)       | 4)       | Rubber band powered model                         |
| 5)       | 6)       | 7)       | 8)       | Small model - under one foot in any direction     |
| 9)       | 10)      | 11)      | 12)      | Airplane made from a plastic kit                  |
| 13)      | 14)      | 15)      | 16)      | Airplane made from a wood kit<br>(no skill level) |
|          |          |          |          | 17) 14"x22"poster on basic parts of an airplane   |

### Senior Division Lots

- | 1                | 2   | 3   | 4   | Skill Level:                                  |
|------------------|-----|-----|-----|---|
| 18)              | 19) | 20) | 21) | Rubber band powered model                     |
| 22)              | 23) | 24) | 25) | Small model - under one foot in any direction |
| 26)              | 27) | 28) | 29) | Airplane made from a plastic kit              |
| 30)              | 31) | 32) | 33) | Airplane made from a wood kit                 |
| (no skill level) |     |     |     |   |
|                  |     |     | 34) | 14"x22" poster on basic parts of an airplane  |

### CLASS B. Model Rocketry

(Plastic fins allowed for grade 3 exhibitors only)

#### Junior Division Lots

- | 1                | 2   | 3   | 4   | Skill Level:   |
|------------------|-----|-----|-----|--|
| 1)               | 2)  | 3)  | 4)  | Single stage rocket - 3 - 4 fin model                          |
| 5)               | 6)  | 7)  | 8)  | Single stage rocket - 5 or more fin model                      |
| 9)               | 10) | 11) | 12) | Multi-stage rocket - 2 or 3 stages                             |
| 13)              | 14) | 15) | 16) | Payload rocket   |
| 17)              | 18) | 19) | 20) | Any fired rocket - Certificate of Flight must accompany rocket |
| (no skill level) |     |     |     |  |
|                  |     |     | 21) | Homemade rocket  |
|                  |     |     | 22) | Poster on rocket parts   |

### Senior Division Lots

- | 1                | 2   | 3   | 4   | Skill Level:   |
|------------------|-----|-----|-----|--|
| 23)              | 24) | 25) | 26) | Single stage rocket - 3 - 4 fin model                          |
| 27)              | 28) | 29) | 30) | Single stage rocket - 5 or more fin model                      |
| 31)              | 32) | 33) | 34) | Multi-stage rocket - 2 or 3 stages                             |
| 35)              | 36) | 37) | 38) | Payload rocket   |
| 39)              | 40) | 41) | 42) | Any fired rocket - Certificate of flight must accompany rocket |
| (no skill level) |     |     |     |  |
|                  |     |     | 43) | Homemade rocket  |
|                  |     |     | 44) | Poster on rocket parts   |

### CLASS C. Models

#### Junior Division Lots

- | 1   | 2   | 3   | 4   | Skill Level:                               |
|-----|---|-----|-----|--|
| 1)  | 2)  | 3)  | 4)  | Any plastic model vehicle made from a kit  |
| 5)  | 6)  | 7)  | 8)  | Any model ship or boat made from a kit     |
| 9)  | 10)   | 11) | 12) | Any model not listed above made from a kit |
| 13) | Any prepainted metal model made from a kit                                  |     |     |  |
| 14) | Any model not listed above not made from a kit                              |     |     |  |
| 15) | Model displayed in an appropriate setting (Dioramas)                        |     |     |  |
| 16) | Photo story on the construction of a model (gluing, painting, decals, etc.) |     |     |  |
| 17) | Poster story on construction of a model (gluing, painting, decals, etc.)    |     |     |  |

### Senior Division Lots

- | 1   | 2   | 3   | 4   | Skill Level:                               |
|-----|---|-----|-----|--|
| 18) | 19)   | 20) | 21) | Any plastic model vehicle made from a kit  |
| 22) | 23)   | 24) | 25) | Any model ship or boat made from a kit     |
| 26) | 27)   | 28) | 29) | Any model not listed above made from a kit |
| 30) | Any prepainted model made from a kit  |     |     |  |
| 31) | Any model not listed above not made from a kit                              |     |     |  |
| 32) | Model displayed in an appropriate setting                                   |     |     |  |
| 33) | Photo story on the construction of a model (gluing, painting, decals, etc.) |     |     |  |
| 34) | Poster story on construction of a model (gluing, painting, decals, etc.)    |     |     |  |

### CLASS D. Flying

#### Junior Division Lots

- 1) Poster on history of flight
- 2) Poster on principle of flight
- 3) Poster on structure and instruments
- 4) Poster on air safety

### Senior Division Lots

- 5) Poster on history of flight
- 6) Poster on principle of flight
- 7) Poster on structure and instruments
- 8) Poster on air safety

### CLASS E. Bicycle

#### Lots

- 1) Display of bicycle parts and maintenance
- 2) Any other bicycle exhibit

### CLASS F. Geospatial

#### Lots

- 1) Any display relating to this project

### CLASS G. Robotics

#### Lots

- 1) Any display relating to this project

### CLASS H. Wind Energy

#### Lots

- 1) Any display relating to this project

### CLASS I. Aerospace

#### Lots

- 1) Any display relating to this project

### CLASS J. Legos

#### Lots

Gr 3-7 Gr 8+

- 1) 2) Lego display relating to vehicles from a kit
- 3) 4) Lego display relating to vehicles original design
- 5) 6) Lego display relating to buildings from a kit
- 7) 8) Lego display relating to buildings original design
- 9) 10) Any other Lego display from a kit
- 11) 12) Any other Lego display original design

### CLASS K. Science, Engineering, Technology

#### Lots

- 1) Any display relating to this project

### CLASS L. Four - Cycle Engines

#### Lots

- 1) Exhibit identifying parts of an engine and their function
- 2) Display panel of damaged parts of an engine caused by poor maintenance. Identify type of engine and parts - include explanation of cause of damage and prevention suggestions.
- 3) Exhibit on proper engine care and lubrication - include tune-ups, adjustments or modifications necessary for good engine operation and fuel economy.
- 4) Exhibit of events in the engine - include brief explanation
- 5) Exhibit of transmission of power in a mechanical machine - include sketch and explanation of how the power travels.
- 6) Exhibit showing preparation of an engine for storage
- 7) Safety display - some suggestions:
  - a. Safe operation of an engine
  - b. Safe use of power driven equipment
  - c. Causes of equipment accidents
- 8) Article or exhibit for a petroleum power project made in Technology Education, Agriculture Education Class or Shop
- 9) Any other four - cycle engine exhibit

### CLASS M. Two - Cycle Engines

#### Lots

- 1) Exhibit identifying parts of an engine and their functions
- 2) Display panel of damaged parts of an engine caused by poor maintenance - identify explanation of cause of damage and damage prevention suggestions

- 3) Exhibit on proper engine care and lubrication - include tune-ups, adjustments or modifications necessary for good engine operation and fuel economy
- 4) Exhibit of events in the engine - include brief explanation
- 5) Exhibit of transmission of power in one mechanical machine - include a sketch and explanation
- 6) Exhibit showing preparation of an engine for storage
- 7) Safety display - some suggestions:
  - a. Safe operation of an engine
  - b. Safe use of power driven equipment
  - c. Causes of equipment accidents
- 8) Article or exhibit for petroleum power project made in Technology Education, Agriculture Education Class or Shop
- 9) Any other two-cycle engine exhibit

## CLASS N. Tractor

### Lots

- 1) Exhibit identifying parts of the tractor and their function
- 2) Exhibit showing maintenance and safety check (i.e., daily maintenance, periodic lubrication and maintenance, care of tires, etc.)
- 3) Safety display - some suggestions:
  - a. Causes of tractor accident
  - b. Safe operation of tractor on public roads
- 4) An article or exhibit made in Technology Education, Agriculture Education Class or Shop
- 5) Any other tractor exhibit

### Special Awards:

**Miller & Sons Supermarket** - All ribbons. Trophy to Champion and Rosette to Reserve Champion of designated class.

## FOODS AND NUTRITION Department 25 Pre-Fair Event

**Check-in:** Tuesday, July 17, Exhibition Hall

Classes: **Foods 1** (A - B) 2:30 - 5:45 p.m.  
**Foods 2** (D - E) 2:30 - 5:45 p.m.  
**Foods 3** (G - H) 2:30 - 5:45 p.m.  
**Foods 4** (J - K) 2:30 - 5:45 p.m.  
**Food Preservation** (M) 2:30 - 5:45 p.m.  
**Cake Decorating** (N) 2:30 - 5:45 p.m.  
**Posters** (C, F, I, & L) 2:30 - 5:45 p.m.

**\*\*\*Entries arriving after the stated check-in times will NOT be allowed. No exceptions!\*\*\***

**Judging:** Exhibition Hall, Tuesday, July 17

Classes:  
**Posters** (C, F, I, & L) 3:00 p.m., Danish Judging  
**Foods 1 & 2** (A-B,D-E) 3:00 p.m., Conference Judging  
**Foods 3 & 4** (G - H, J - K) 3:00, Individual Conference Judging  
**Food Preservation** (M) 3:00 p.m., Individual Conference  
**Cake Decorating** (N) 3:00 p.m., Individual Conference

**Department Chairperson:** Susie Herlache - H: 608-846-3543  
 C: 608-628-4284

**Superintendent:** Jennifer Keller Farwell, Margaret Francois, Katelyn Herlache and JoAnn Lein

**Youth Superintendent:** Will Karls

**Eligible 4-H Project Area:** Foods & Nutrition

### Regulations:

1. Enter the class & lots for the area you are enrolled. Example, if you are enrolled in Foods 1, you must enter only in those lots. Grade levels are only a suggestion listed in the project guide. Check the top level of your fair entry form to determine the level of Foods in which you are enrolled.
2. Entry Guidelines (numbers shown indicate maximum # of entries):
  - Foods 1 & 2:** 4 entries in corresponding food lots  
1 entry in posters  
5 entries in food preservation
  - Foods 3 & 4:** 6 entries in corresponding food lots  
1 entry on posters  
10 entries in food preservation
3. The Fair reserves the right to dispose of all baked and perishable food entries displayed at the Fair.
4. A serving of all baked goods and other non-perishable items must be displayed at the Fair.
5. Judges are not required to taste any food exhibits.
6. **Recipes must be on a 3"x5" or 4"x6" card. Menu must be on a 4"x6" card.**
7. Conference judging for Foods 1 & 2 (with the exception of posters), requires that exhibitors be present. Please check in between 2 p.m. and 2:45 p.m. Judging will begin promptly at 3 p.m. Posters should be checked in no later than 5:45 p.m. **You do not need to be present for the judging of your posters.**

**Please read the following rules and lot descriptions carefully!**

### Definitions:

**Family size serving** - Enough for 4 - 6 people, should not be an individual size portion.

**Appropriate Plate/Dish** - Suited to the food prepared and presented. For example, marinated vegetable salad would not be appropriate on a large dinner plate. It is more suited on a smaller size plate. Plates may be paper, glass, etc.

**Heart Healthy\* Recipe or Menu** - One that uses naturally low fat ingredients, or that uses lower fat food substitutions to decrease the fat content of a recipe by at least one third and is also relatively low in sodium.

<u>Premiums:</u>	<u>Blue</u>	<u>Red</u>	<u>White</u>	<u>Pink</u>
Classes A - N	\$1.75	\$1.50	\$1.25	\$1

## Foods & Nutrition I "Six Easy Bites"

### CLASS A. Perishables

#### Grades

**3 4-6**

- 1) 2) Fresh vegetable relishes - at least 5 different fresh vegetables. Family size serving. May include a vegetable dip.
- 3) 4) Fresh fruit plate - at least 5 different fresh fruits. Family size serving. May include a fresh fruit dip.
- 5) 6) Deviled eggs - 6 halves attractively displayed on an appropriate plate. Include recipe.
- 7) 8) Mama Mia Pizza Pockets - display 1 pizza pocket on appropriate plate with garnish. No recipe needed
- 9) 10) Stuffed baked potato - display 1 baked potato, with no more than 4 toppings, on appropriate size serving plate with garnish.
- 11) 12) Heart-Healthy\* snack/appetizer - Single serving on/in an appropriate serving dish. Be prepared to discuss recipe and nutrition. Include recipe.
- 13) 14) Any item not listed above. Include recipe.