

DEPARTMENT 10



SECTION A-24 4-H AND FFA NATURAL RESOURCES



CLASS 11 — MAPLE SYRUP

- Year 1 — 1 quart maple syrup
- Year 2 — at least 1/2 pound of maple cream
- Year 3 — One each: 1 quart maple syrup, at least 1/2 lb. maple cream, 1 lb. Cake maple sugar OR an educational display about making maple syrup. Display must include one of the above products.

CLASS 12 — GPS/GIS

Exhibit a poster that does one of the following. (Include photos, pictures, or drawing to help relay your information):

- Explains how a GPS works
- Describes your geocaching experience.
- Describes how you established your own geocache.

CLASS 13 -- HONEY

- Jar of honey
- Jar of honey with honey comb
- Poster
- Display
- Scrapbook
- Other



SECTION A-26 4-H & FFA ENGINEERING



Premiums \$3 \$2 \$1

CLASS 1 —ELECTRIC EXCITEMENT

(A different item must be made and exhibited for each year in the project.)

- Electric 1:
 - Year 1. Exhibit a simple working circuit using a light, buzzer, lamp, or other electric-powered object.
 - Year 2. Exhibit an electromagnet, galometer, or motor
- Electric 2 — Exhibit a simple telegraph, burglar alarm or rocket launch system. (Make a different one each year.)
- Electric 3 — Exhibit one of the following:
 - Electrical tool & supply kit with items labeled.
 - Poster of floor plan(s) of your home (min. of 5 rooms) showing location of the service entrance panel and all switches, receptacles, and fixtures, using appropriate symbols.
 - A switch, labeled as either single pole or three-way, correctly wired.
- Electric 4 — Exhibit one of the following. (Make a different one each year.)
 - Working integrated circuit.
 - LED circuit with blinking light.
 - Alarm built using photocell or an intruder alarm

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SECTION A-26 4-H & FFA ENGINEERING



Premiums \$3 \$2 \$1

CLASS 2 — WOOD SCIENCE

Refer to Roundup Requirements

- Measuring Up
- Making the Cut
- Nailing It Together
- Finishing It Up
- Free Lance Project
 - Small Furniture
 - Large Furniture
 - Small Item
 - Large Item

CLASS 3 — BICYCLE ADVENTURES

Exhibit a poster (14" x 22") regarding any phase of the Bicycle project.

- Unit 1
- Unit 2
- Unit 3

CLASS 4 — SHOOTING SPORTS

Refer to Roundup Requirements

- Air Rifle
- Advanced Air Rifle
- Air Pistol
- Advanced Air Pistol
- .22 Rifle
- Archery
- Shotgun
- Shooting Sports Craft— Display Item Made

CLASS 5—SMALL ENGINES

- Level 1:
 - External Parts—Display a small (max. 18 h.p.) engine with external parts identified by name and function.
 - Tools—Display 10 tools or pictures of 10 tools and descriptions of their functions. (If using actual tools, be sure to fasten them securely to display board.)
 - Shop Safety—Display or poster focusing on small engine shop safety
- Level 2:
 - Internal Parts—Display a small (max. 18 h.p.) engine with internal parts identified by name and function.
 - Personal Safety—Display or poster focusing on personal safety in a small engine shop.
 - Engine Oil—Display or poster on engine oil viscosity and service classification.

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C. Level 3:

1. Troubleshooting—Poster or display on troubleshooting an engine, how the problem was identified, and how it was fixed.
2. Starting a Business—Display or poster on the research done in consideration of starting a small engine business.

CLASS 6 — ROCKETRY

A. Beginning:

1. Exhibit a single-stage rocket (simple tube design) and completed project book.
2. Exhibit a single-stage rocket (more advanced design) and completed project book.

B. Advanced:

1. Exhibit a basic multi-stage rocket and completed project book.
2. Exhibit a more advanced multi-stage rocket and completed project book.

CLASS 7 — BOTTLE ROCKETRY

A. Ages 8-12:

1. First year: Exhibit bottle rocket and launch record.
2. Second year: Exhibit bottle rocket and poster explaining one of the experiments and your results.

B. Ages 13-18: (Must complete project on one year).

Exhibit bottle rocket and poster explaining one of the experiments and your results.

CLASS 8 — WIND POWER

- A. Year 1: Exhibit a wind-powered boat of your own design. Include a chart of the pros and cons of wind power.
- B. Year 2: Exhibit a poster (14" X 22") on turbines.
- C. Year 3: Display your own turbine. In your exhibit, include information on the effects of pitch on the blades and how it changes the energy produced.

CLASS 9 — ROBOTICS

A. Level 1

1. Module 1 (Marshmallow Catapult)
2. Module 2 (Pneumatic Arm)
3. Module 3 (Gripper)

B. Level 2

1. Module 1 (Clipmobile)
2. Module 2 (Can Can Robot)
3. Module 3 (Es Car Go Vehicle)

C. Level 3

1. Module 1,2 (Wall Following Robot)
2. Module 3 (Design and Build A Robot)

CLASS 10 — TRACTOR SAFETY

- A. Task sheets and poster showing activities done.

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SECTION A-26 4-H & FFA ENGINEERING



CLASS 11 — WOOD WORKING

- A. Large finished item
- B. Small finished item
(A poster may be submitted in place of an item too valuable to be left at fair)

CLASS 12 — AEROSPACE

- A. Poster

CLASS 13 — WATER PROJECT

- A. Poster

CLASS 14 — ROCKETS TO THE RESCUE

- A. Poster

CLASS 15 — WELDING

- A. Year 1
- B. Year 2
- C. Year 3
- D. Year 4



SECTION A-27 4-H AND FFA ENTOMOLOGY



Premiums \$3 \$2 \$1

CLASS 1 — ENTOMOLOGY

- A. Year 1-25 different insects representing 5 insect orders.
- B. Year 2-50 different insects representing 7 insect orders.
- C. Year 3-70 different insects representing 9 insect orders.
- D. Year 4-90 different insects representing 10 insect orders.
- E. Creepy Crawlers—Exhibit a poster, display or model
- F. Pest Patrol—Exhibit a poster

CLASS 2 — National Youth Science Day

- A. Poster
- B. Picture Story

CLASS 3 — Embryology

- A. Poster
- B. Picture Story

CLASS 4 — Animal Science

- A. Create a poster or Display on a scientific topic about your species.

