

SECTION 019 SCIENCE, ENGINEERING and TECHNOLOGY
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***PROJECT RECORD SHEETS
REQUIRED FOR YOUTH BUILDING ENTRIES.**

A General Project Record or Cloverbud Project Record and an Exhibit Tag **must** accompany each exhibit entered in the Youth Building. A copy of the General Project Record is enclosed in the fair book. Additional copies of the Project Record Sheet can be found in past issues of the 4-H Leaders' Digest, our web site at www.ccedelaware.org or by visiting or calling the 4-H office. Fair book classes that required a 3" x 5" index card attached to an entry in the past is no longer required. The Project Record Sheet will take the index card's place.

All woodworking, electrical, electronic or computer projects will be judged on Monday as they are brought to the fair and BEFORE they are displayed. Each exhibitor is responsible for presenting his (or her) exhibit to the judge.

Articles in this exhibit must have been made and selected according to 4-H standards during the current project year. Three articles per class per member may be entered in this section. If project was made in a school shop class, indicate on the Project Record sheet.

WOOD SCIENCE PROJECTS

Class No.

- 2400 **Hand Tool Division**. Article made in a Wood Science Project that was cut out, assembled and finished with hand tools only.
- 2401 **Power Tool Division** – Article made in a Wood Science Project that has been partially or totally completed with power tools.
- 2402 **Kit Division**. Article made in a Wood Science Project that is made from materials precut by an outside resource (i.e., 4-H office, commercial supplier or woodworking leader) but is assembled and finished by the exhibitor.
- 2403 **Open Class**. Article made in Wood Science Project that does not fit in above categories. Judges will place emphasis on quality of workmanship by exhibitor and the intended use of the project. Exhibits to be entered in this division will be at the discretion of the Extension 4-H Educator.

ELECTRICAL SCIENCE PROJECTS

Class No.

- 2426 **Electric Division**. Article in an Electric Project, such as a trouble lamp, test lamp, portable bench light, extension cords, pin-up or study lamp, or the rewiring of an old lamp is acceptable. Tension restraint device must be in place especially in lamp sockets. Where appropriate underwriters knot should be used. Due to safety code compliance, molded polarized and/or prefabricated cords with polarized plugs; where applicable are allowed. Lamps without bulbs or shades will not be considered complete and will be evaluated accordingly. Projects involving both woodworking and electrical tasks will be evaluated on the merits of both.
- 2427 **Electronics Division**. Article made in an Electric Project utilizing principles and construction procedures relating to electronics is acceptable. Projects will be evaluated on the basis of soldering and connection techniques, neatness of assembly and other assembly procedures for electronic projects. Projects must be hand-wired and no breadboard kits will be accepted. Project must be operable (i.e. contain all necessary batteries). Include a short explanation of why or how the exhibit works and what use it has.

EDUCATIONAL DISPLAYS

Class No.

- 2428 **A series of posters (at least 14" x 22") and/or a 3-dimensional exhibit related to an engineering science project.**
- Display should be self-explanatory through use of signs or labels and limited to approximately card table size. Topics may include such things as engine parts or bicycle parts display boards, electric circuit boards, electric quiz games, computer project display, safety rules for bicycling or working in a wood shop or with electricity. Entry will be evaluated on the purpose or principle idea, effectiveness in illustrating one idea, appearance, arrangement and description of the display. Exhibit must be self-explanatory.

ROCKET PROGRAM

Class No.

- 2429 **Junior Division.** Any rocket made in a Rocket Program either from a kit or non-kit materials and totally assembled and finished by a youth 13 years of age or younger. Evaluators will place emphasis on proper kit assembly and finishing.
- 2430 **Senior Division.** Any rocket made from non-kit materials and totally constructed and finished by a youth 14 years and older. Emphasis placed on proper construction techniques and finished product. *Kits may be used* when incorporated with other materials to meet the requirements on an *Educational Display* as outlined in Class No. 2428.

RELATED ENGINEERING SCIENCE PROJECTS

Class No.

- 2431 **Related Engineering Science Projects.** Any article made as a part of a directly related Engineering Science project, such as metal working, cardboard carpentry, safety items and not included in Class 2400-2430.
Kits not acceptable for Senior Division entries (14 years and over).
- 2432 **Science Experiments & Exhibits.** An opportunity for participants to learn about and experience science concepts in an area of agriculture, human ecology or life sciences that the participant really enjoys. Individual or group entries are encouraged.
Below are some examples of types of projects you may conduct. Any type or combination of the types of science projects below along with creativity is encouraged.
- 2433 **Experiments.** Describe your hypothesis (what you think will happen). Describe the procedures you performed. Describe the observations you made and what conclusions you drew from your experiment. Include photos or drawings and samples (if possible) from your experiment. If it is difficult to recreate the study for the exhibit, drawings or photographs are acceptable. Use heavy poster paper (14" x 22" minimum) as a background. Attach photos and diagrams, along with sheets of paper that include your experiment description within these sections: 1) introduction; 2) hypothesis; 3) methods; 4) results; and 5) your conclusion.
- 2434 **Public Service Projects.** Exhibits can be of any public service or public education activity you took part in that had a scientific component to it. Watershed rehabilitation, recycling programs and educational models are just a few of the possibilities here. Project exhibit posters must be clearly labeled with a written statement of what the project is, how it relates to science, and why you are interested in the project.
- 2435 **Descriptive Science.** Science projects which are not experiments and are not applied service projects, but do consist of systematic observations and tell us about the natural world. Exhibit could show summaries of what you observed (how the local bird population changes with the seasons, where flies like to breed in a barn, how many bites of food different animals eat per minute, etc.). Could present collections and classifications of materials which display physical or biological articles.

RELATED GEOSPATIAL SCIENCE PROJECT

4-H exhibits that show skills and knowledge learned through 4-H GPS and GIS projects.

- 2437 **4-H GIS Maps.** Maps made using ESRI
(Environmental Systems Research Institute, Inc.) Arc GIS software or other mapping software. Criteria and Guidelines for Community Mapping Projects can be found on NYS 4-H web page. GIS map exhibits may be selected for a Display competition sponsored by NIFA and National Geographic Society.
- 2438 **GIS or GPS Project or Activity.** Undertaken by individual or group. Exhibit may be in the form of a project record book, photo documentation, video, CD, DVD or whatever. Exhibit must include project report documenting statement of purpose and outcome of project activity.
- 2439 **Story or Outline of a 4-H GIS or GPS Project.**
Including photos, purpose of activity and summary or results.
- 2440 **Community Service/Youth Community Action Mapping Project.** A mapping or GPS project built around a specific community issue or project.
- 2441 **Educational Poster Exhibit displaying 4-H GPS or GIS activities.** Public Presentation on 4-H and Geospatial Science (see Public Presentation Program in Teen Leader Packet at <http://nys4h.cce.cornell.edu/program/events/SFStaffInfo.php>).
- 2442 **Open Class.** Any other approved 4-H project made as a part of a related 4-H project that does not fit any other class.