

sional display. Individual exhibits are **limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep and 36" high. Posters are limited in size to 30" by 24"**.

Exhibits may include pictures, models, diagrams and actual articles if they meet the safety standards listed below. Drawings or photos which are an essential part of the display should be firmly attached to the board. Loose materials like soil, bark or sand must be displayed in closed containers. **No books or notebooks will be accepted as part of the display. The following materials will not be allowed on the display for safety reasons:**

- Living organisms- plants or animals
- Any liquids
- Aerosol bottles or other pressurized gases
- Glass
- Hazardous substances
- Sharp items

Display (all parts) should be able to last the duration of the fair in good repair. *An Educational Display Exhibit Card* (000-01) must be attached to each exhibit. Judging criteria are outlined on the *4-H Science Investigation Display Evaluation Sheet* (840-100). Both are available from the county Extension Office or the state 4-H website at <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology>

Club exhibits are to be entered under the club name but must include the names of all members and leaders. This may be on a separate paper securely attached to the back of the exhibit. Club exhibit will receive one ribbon per exhibit.

Each piece of an exhibit must have name, county and class numbers securely attached to it. All parts of the display should be attached to one another in some way to keep the exhibit together as a unit.

Single posters may be displayed by hanging or stapling to the wall. All other displays should be free standing. All information contained in the exhibit must be able to be viewed by the public by looking at the display.

- 840 100 001 Junior Science Investigation Display**
840 100 002 Intermediate Science Investigation Display
840 100 003 Senior Science Investigation Display
840 100 004 Club Science Investigation Display

Description: The purpose of this type of exhibit is for members to communicate the processes and outcomes of a scientific investigation they design and conduct themselves. The display must include (1) a question or hypothesis, (2) an investigative procedure (What was done?), (2) the data collection or observation method (How was it collected/ observed), (3) a report of the data collected or observations made, (4) an analysis of the data collected or observations made (How do you interpret the data and evidence?), (5) a conclusion addressing the original question or hypothesis (Does the evidence support or refute your claim?). Intermediate and Senior Exhibits must include a data chart and a graph or other visual representation of the data.

Technology

Each exhibit piece must be labeled with the member's name, county and class number. Each exhibit must

include the appropriate Project Description form filled out neatly and securely attached to the exhibit. *4-H Project Description sheets* are posted at <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology> Participant should answer the description page carefully and in full sentences.

If more than one article is contained in the exhibit then each article must be labeled with the member's name, county and class number and attached to each other. The one exception to this is the Rocketry Engineering Journal, which must be included with the Rocket display, but is not required to be attached to it. This may be done with masking tape/index card with a marker or writing directly on the back with a marker. Judging Evaluations can be found at: <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology> These provide valuable information to youth on their project displays.

In some cases, the exhibit may be a poster or a three-dimensional display. Individual exhibits are **limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep and 36" high.**

Aerospace

Stage 2

- 851 100 010 Rocketry**
851 100 020 Educational Poster- Aerospace
Stage 3
851 101 010 Rocketry
851 101 020 Educational poster- Aerospace
Stage 4
851 102 010 Rocketry
851 102 020 Education poster- Aerospace

Note: Fill in blank in class number (___) with one of the following numbers.

- 11 **Junior**, First year in this project area
 21 **Other Junior**
 12 **Intermediate**, First year in this project area
 22 **Other Intermediate**
 13 **Senior**, First year in this project area
 23 **Other Senior**
 34 **Club Exhibit**
 860 100 0 ___ **GPS/GIS Exploring Spaces, Going Places**
 860 100 1 ___ **GPS/GIS, Projects**
 860 101 5 ___ **GPS/GIS, Map**
 861 100 1 ___ **Computer Software Application, Word Processing**
 861 101 1 ___ **Computer Software Application, Excel/Spreadsheet**
 861 102 1 ___ **Computer Software Application, Presentation Software**
 861 103 1 ___ **Computer Software Application, Graphic Design/Digital Imaging**
 861 104 1 ___ **Computer Software Application, Database Management**
 861 105 1 ___ **Computer Software Application, Multimedia Projects**
 861 100 2 ___ **Computer Programming**
 861 100 3 ___ **Computer Hardware Design**
 863 102 1 ___ **Education poster- Robotics Level 1**
 863 102 2 ___ **Education poster- Robotics Level 2**
 863 102 3 ___ **Education poster- Robotics Level 3**
 863 103 1 ___ **Robotics/ Lego Robotics**

AEROSPACE PROJECT

Stage 2, Lift-off (Stage 1 is for Grades 1-3)
851 100 010 Rocketry

Description: An exhibit of a rocket made by the member from the Aerospace Adventures Stage 2 project kits and a Rocketry Engineering Journal. Rockets displayed in this class may only be made from the Estes Gnome™, Wizard™, or Mosquito™ rocket kits. Rockets included in a static display MUST be shown without engines or igniters. All the parts of the rocket and their function should be identified.

Rocket components which must be included and labeled are body tube, nose cone, engine hook, fins, recovery system (streamer or tumble method), launch lug, engine mount, and shock cord. On the display, list any items required to launch the rocket and their function such as the launch system, igniters and recovery wadding. List the appropriate engine size(s) for your rocket and your level of experience. The exhibit will be judged on neatness of labels and workmanship. See additional exhibit requirements, above, for Technology classes. Evaluation: Use Aerospace-Rocketry Evaluation available at: <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology>

851 100 020 Educational Poster- Aerospace

An educational poster on any aerospace or aeronautics topic youth learned about in Aerospace Adventures, stage 2, except rockets. Display should demonstrate knowledge gained in one of these topics: space, kites, hot air balloons, weather or aerospace careers.

In some cases, the exhibit may be a poster or 3 dimensional display. Individual exhibits are **limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep, 36" high.** Posters must not exceed 22"x28". Judging criteria are outlined on the *4-H Education Display Check Sheet* (40-463) available from the county Extension Office or the state 4-H website at <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology>

Stage 3, Reaching New Heights

851 101 010 Rocketry

Description: An exhibit of a rocket made by the member from the Aerospace Adventures Stage 3 project kits and a Rocketry Engineering Journal. In Stage 3 the Rocketry Engineering Journal must include a rocket launch and flight report. Rockets displayed in this class may only be made from the Estes Monarch™, Alpha™, or Alpha III™ rocket kits. Rockets included in a static display MUST be shown without engines or igniters. All the parts of the rocket and their function should be identified. Rocket components which must be included and labeled are body tube, nose cone, engine hook, fins, recovery system (parachute), launch lug, engine mount, and shock cord. On the display, list any items required to launch the rocket and their function such as the launch system, igniters and recovery wadding. List the appropriate engine size(s) for your rocket and your level of experience. The exhibit will be judged on neatness of labels and workmanship. See additional exhibit requirements, above, for Technology classes. Evaluation: Use Aerospace- Rocketry Evaluation available at: <http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology>

851 101 020 Educational poster- Aerospace

An educational poster on any aerospace or aeronautics topic youth learned about in Aerospace Adventures, stage 3, except rockets. Display should