SCIENCE
Open to all 4-H members regardless of project enrollment. The exhibit may be a poster or a three-dimensional display. Individual three-dimensional exhibits are limited in size to 48” wide (measured when lying flat), 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
* Aerosol bottles or other pressurized gases
* Hazardous substances
* Sharp items
* Any liquids

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
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. Posters must not exceed 22”x 28”.

AEROSPACE
Each exhibit piece must be labeled with the member’s name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member’s name, county and class number. This may be done with masking tape, attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be 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.

Each exhibit must include the current year’s edition of the appropriate Project Description for the exhibit 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. Be sure to use the newest version of the Project Descriptions for each technology exhibit. Exhibitors should answer the description page carefully and in full sentences. This is the exhibitor’s opportunity to tell the judge about their project. Judging Evaluations can be found at:
http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology. These provide valuable information to youth on creating their project displays.

**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

**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 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. Posters must not exceed 22”x 28”. 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 demonstrate knowledge gained in one of these topics: rocket stabilization methods, airplanes, helicopters, gliders, pilot training, kites, or aerospace careers.
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. Posters must not exceed 22”x 28”. 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 4, Pilot in Command

851 102 010 Rocketry
Description: An exhibit of a rocket made by the member from the Aerospace Adventures Stage 4 project kits and a Rocketry Engineering Journal. In Stage 4 the Rocketry Engineering Journal must include a rocket launch and flight report. Rockets displayed in this class may be made from the Estes Viking™ rocket kit, or other skill level 1 rocket kit where the member designs, constructs and tests the fin configuration. 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

851 102 020 Education poster- Aerospace
An educational poster on any aerospace or aeronautics topic youth learned about in Aerospace Adventures, stage 4, except rockets. Display should demonstrate knowledge gained in one of these topics: construction and use of altitude tracker, pilot training requirements, aerospace science and technology, astronaut training, box kites, helicopters, or aerospace careers.
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.
Posters must not exceed 22”x 28”. 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

GEOSPATIAL SCIENCE
Each exhibit piece must be labeled with the member’s name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member’s name, county and class number. This may be done with masking tape, attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be attached to each other.
Each exhibit must include the current year’s edition of the appropriate Project Description for the exhibit 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 . Be sure to use the newest version of the Project Descriptions for each technology exhibit. Exhibitors should answer the description page carefully and in full sentences. This is the exhibitor’s opportunity to tell the judge about their project. Judging Evaluations can be found at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology . These provide valuable information to youth on creating 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.
Posters must not exceed 22”x 28”.
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

860 100 0_ _ GPS/GIS Exploring Spaces, Going Places
Open ONLY to Juniors, Intermediates or Seniors who are in their first year in this project area.
Description: Using the Level 1 “Take Me on a Tour” activity, create a map showing four to six tour sites, geo-tools used to create the map, positional data for the sites, and information about the selected site.

See additional exhibit requirements, above, for Technology classes. Evaluation: Use GPS/GIS Mapping Projects Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

860 100 1_ _ Geospatial Science Project
Description: GPS or GIS Projects. Exhibit may be an exhibit, binder or presentation on a disk, CD or thumb/travel drive. Computer presentations should follow requirements for similar exhibits found in the Computer Project exhibit classes. Examples of displays include creating a Community Atlas, geography project, or project reports presented to a community meeting. A project entry should contain two or more maps. Maps may be either be informational or directional. Maps that are not created by the member(s) may be included but the source of the map must be clearly shown. The exhibit should describe how the member’s project addresses an issue or solves a problem.

See additional exhibit requirements, above, for Geospatial classes. Evaluation: Use GPS/GIS Mapping Projects Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

860 101 1_ _ GPS/GIS, Map
Description: Exhibit will be one map. A map is a single product of data gathering, manipulation and presentation skills. Maps may be either informational or directional. Maps can be computer generated or hand drawn. Multiple maps should be entered as a Geospatial Science Project exhibit.
See additional exhibit requirements, above, for Geospatial classes. Evaluation: Use Map Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

COMPUTER

Each exhibit piece must be labeled with the member’s name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member’s name, county and class number. This may be done with masking tape, attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be attached to each other.

Each exhibit must include the current year’s edition of the appropriate Project Description for the exhibit 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 Be sure to use the newest version of the Project Descriptions for each technology exhibit. Exhibitors should answer the description page carefully and in full sentences. This is the exhibitor’s opportunity to tell the judge about their project. Judging Evaluations can be found at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology These provide valuable information to youth on creating 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.** Posters must not exceed 22” x 28”.

These classes are open to all 4-H members without being enrolled in the 4-H computer project. See additional exhibit requirements, above, for Technology classes.

A print version of the program must be submitted unless otherwise noted in the class description below. Youth are responsible for submitting clear directions on how judges can access the files, read code and start programs. You may include a disk, CD or thumb/travel drive as part of your exhibit. If you do, all files must be compatible with use on a PC.

Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. **The youth exhibitor should identify a problem to solve or create a work application involving technology. Possible ideas might include:** applying existing software programs to a 4-H project area, composing music,
developing a game, drawing landscape scenes, designing buildings, publishing club newsletters, creating a website, editing a video, working with photographs, etc.

Online projects using Google applications or other Web 2.0 software are acceptable. Youth must make sure clear directions are given in the project explanation so the judges can find and access the project online. Website exhibits must be viewable online or on a disk, CD or thumb/travel drive.

Exhibits entered in the “Programming” class must be a program written, translated, or substantially (at least 30%) altered by the 4-H member. In the programming projects please submit a hard copy or thumb/travel drive for programs with excessive pages such as GameMaker software and working files so the judge can see the code. Submit a URL that points to the development software so it can be downloaded.

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

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

861 100 1  Computer Software Application, Word Processing
Description: Projects created by youth that show learning in the area of word processing. Project should be an original creation by the participant that shows their word processing skills.
See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

861 101 1  Computer Software Application, Excel/Spreadsheet
Description: Projects created by youth that show learning in the area of spreadsheet design and usage. Project should be an original creation by the participant that shows their spreadsheet skills. Intermediate and Senior members are expected to have some formula usage in their project.
See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

861 102 1  Computer Software Application, Presentation Software
Description: Projects should be created by youth to show learning in the area of presentation design skills. Software can be any current presentation software including online versions like Google applications or voicethread.com. Project should be created by the participant to show their presentation design skills. Youth can also submit video clips of how the presentation was used. (For example: A video clip of the youth using the presentation in a group activity.)
See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

861 103 1  Computer Software Application, Graphic Design/Digital Imaging
Description: Projects created by youth that show learning in the area of graphic design or digital imaging. Software can be any current presentation software including online versions. Project should be created by the participant to show their graphic design or digital imaging skills.
See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

861 104 1 Computer Software Application, Database Management
Description: Projects created by youth that show learning in the area of database management. Project should be an original creation by the participant that shows their spreadsheet skills. Intermediate and Senior members are expected to have apply their projects to real world scenarios. Youth are responsible for submitting clear directions on how judges can access the files.

861 105 1 Computer Software Application, Multimedia Projects
Description: Projects created by youth that show learning in the area of Multimedia Projects. Software can be any current software including online versions. Project should be created by the participant to show their multimedia skills. In general, multimedia includes a combination of text, audio, still images, animation, video, or animation. Multimedia combines multiple content forms. Youth are responsible for submitting clear directions on how judges can access the files.

861 100 2 Computer Programming
Description: Projects created by youth that show learning in the area of programming. Project should be created by the participant to show their programming skills. Hard copy or travel/thumb drive (for programs with excessive pages, such as GameMaker software) of the program must be submitted. It is up to the youth to ensure the program will function or display at Fair. Youth are responsible for submitting clear directions on how judges can access the files. Submit information that allows a judge to look at the programming code in order to evaluate your work on the Computer Programming Project Description Form. If only an executable (compiled) product is submitted the project cannot be judged in the computer programming class.

861 100 3 Computer Hardware Design
Description: Projects created by youth that show learning in the area of hardware. Project should be an original creation by the participant that shows their computer hardware skills. It is up to the youth to ensure the hardware and project will function or display at Fair. Intermediate and Senior members are expected to have apply their projects to real world scenarios. Youth are responsible for submitting clear directions on how judges can access the files.

See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Hardware Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

ROBOTICS
Each exhibit piece must be labeled with the member’s name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member’s name, county and class number. This may be done with masking tape, attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be attached to each other.

Each exhibit must include the current year’s edition of the appropriate Project Description for the exhibit 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. Be sure to use the newest version of the Project Descriptions for each technology exhibit. Exhibitors should answer the description page carefully and in full sentences. This is the exhibitor’s opportunity to tell the judge about their project. Judging Evaluations can be found at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology. These provide valuable information to youth on creating 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. Posters must not exceed 22”x 28”.

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

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

863 102 1_ _ Education poster- Robotics Level 1
An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level 1, Give Robots a Hand, addressing the theme robotic arms, hands and grippers.
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. Posters must not exceed 22”x 28”.
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

863 102 2_ _ Education poster- Robotics Level 2
An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level 2, Robots on the Move, addressing the theme moving, power transfer and locomotion.
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. Posters must not exceed 22”x 28”.
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

863 102 3_ _ Education poster- Robotics Level 3
An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level 3, Mechatronics, addressing the theme the connection between mechanical and electronic elements.
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. Posters must not exceed 22”x 28”.
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

863 103 1_ _ Robotics / Lego Robotics
Description: Project should involve youth created robots. They can be created from kits or from miscellaneous parts. All robots will be returned after fair. More weight is given for youth designed projects. Robot and full description of what it is meant to accomplish must be submitted. Robots will be judged on structural stability, creativity, functionality. Youth are responsible for submitting clear directions on how judges can access the files and make robot function.
See additional exhibit requirements, above, for Robotics classes. Evaluation: Use Robotic Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

Lego Construction Display   (COUNTY ONLY)
Description: An original creation built out of Legos. The project does not need to be robotic. Participant should answer the description page carefully and in full sentences. Evaluation: Use Lego Evaluation available at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

**ENGINEERING**

**ELECTRICITY**

Exhibits will be any of the articles included in the project manuals that show skills learned in the project. Items must be labeled with member’s name, county, and class number. To qualify for judging, an Electric Energy Explanation Card must be attached. Forms are available at the county Extension offices and at the State 4-H website: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology. Intermediates and seniors must include a schematic diagram. 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.

Classes will be divided into the following groups:

- 862 100 001 Electricity, Junior
- 862 100 002 Electricity, Intermediate
- 862 100 003 Electricity, Senior

**Mechanical Science**

You may enter ATV, automotive, bicycles, handyman, small engines, snowmobile, etc., projects in the Educational Display classes found in the Communications section of the fair book.

**WOOD WORKING**

In each class, the exhibit shall be one article or pair of articles made of wood by the 4-H member. Completed “Woodworking Explanation Card” 871-02 is required to qualify the exhibit for judging. Judging criteria are outlined on 4-H Woodworking Exhibit Score Card (871-01), available at the county Extension office or on the State 4-H website at: http://oregon.4h.oregonstate.edu/contest-materials-science-engineering-technology

- 871 100 001 Woodworking, Junior
- 871 100 002 Woodworking, Intermediate
- 871 100 003 Woodworking, Senior

**TRACTOR**

In each class the exhibit shall be an educational exhibit which will show or illustrate what the member has learned. Include an explanation telling: (a) how the exhibit was made or what was done in the project; (b) operating instructions (if appropriate); and (c) what the member learned by the doing the project.

Explanations are required to qualify the exhibit for judging.

- 881 100 001 Junior
- 881 100 002 Intermediate
- 881 100 003 Senior