

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

Description: An exhibit of two parts: (1) a rocket made by the member from the Aerospace Adventures Stage 2 project kit, and (2) 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.

A Rocketry Engineering Journal is required. Include the date of each meeting, names of the persons present and a record of what was done. Include photos or illustrations. The information will be used to fill out the Aerospace-Rocketry Project Description sheet for the fair. It is important that the member downloads the Aerospace-Rocketry Project Description sheet from 4-H Project Description sheets posted at <http://oregon.4h.oregonstate.edu/node/1858> to know what is required in the Build Report and the Launch and Flight Reports in the Journal.

See additional exhibit requirements, above, for Aerospace classes. Evaluation: Use Aerospace- Rocketry Evaluation available at: <http://oregon.4h.oregonstate.edu/node/1858>

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/node/1858>

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.

A Rocketry Engineering Journal is required. Include the date of each meeting, names of the persons present and a record of what was done. Include photos or illustrations. The information will be used to fill out the Aerospace-Rocketry Project Description sheet for the fair. It is important that the member

downloads the Aerospace-Rocketry Project Description sheet from 4-H Project Description sheets posted at <http://oregon.4h.oregonstate.edu/node/1858> to know what is required in the Build Report and the Launch and Flight Reports in the Journal.

See additional exhibit requirements, above, for Aerospace classes. Evaluation: Use Aerospace- Rocketry Evaluation available at: <http://oregon.4h.oregonstate.edu/node/1858>

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/node/1858>

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.

A Rocketry Engineering Journal is required. Include the date of each meeting, names of the persons present and a record of what was done. Include photos or illustrations. The information will be used to fill out the Aerospace-Rocketry Project Description sheet for the fair. It is important that the member downloads the Aerospace-Rocketry Project Description sheet from 4-H Project Description sheets posted at <http://oregon.4h.oregonstate.edu/node/1858> to know what is required in the Build Report and the Launch and Flight Reports in the Journal.

See additional exhibit requirements, above, for Aerospace classes. Evaluation: Use Aerospace- Rocketry Evaluation available at: <http://oregon.4h.oregonstate.edu/node/1858>

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/node/1858>

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 asking 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/node/1858> 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/node/1858>. 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".

860 100 0 __ GPS/GIS Exploring Spaces, Going Places**860 100 1 __ GPS/GIS, Projects****860 101 5 __ GPS/GIS, Map**

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

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 Geospatial classes. Evaluation: Use GPS/GIS Mapping Projects Evaluation available at:

<http://oregon.4h.oregonstate.edu/node/1858>

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/node/1858>

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 be 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/node/1858> 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/node/1858>. 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