

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 fair. It is important that the member downloads the Aerospace-Rocketry Project Description sheet from *4-H Project Description sheets to know what is required in the Build Report and the Launch and Flight Reports in the Journal*. See additional exhibit requirements for classes under Aerospace above.

Evaluation: Use Aerospace- Rocketry Evaluation  
**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. 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 Offices or the state 4-H website.

## STAGE 4, PILOT IN COMMAND

**851 102 010 Rocketry:** Description - An exhibit of two parts: (1) a rocket made by the member from the Aerospace Adventures Stage 4 project kits, and (2) 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 fair. It is important that the member downloads the Aerospace-Rocketry Project Description sheet from *4-H Project Description sheets to know what is required in the Build Report and the Launch and Flight Reports in the Journal*. See additional exhibit requirements for classes under Aerospace above.

Evaluation: Use Aerospace- Rocketry Evaluation.  
**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. 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.

## GEOSPATIAL SCIENCE

1. 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.
2. 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. 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 on the state website. These provide valuable information to youth on creating their project displays.
3. 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**

(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.

**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