

## **DEPARTMENT – BUILDING EXHIBITS**

### **SECTION –STEM - UNMANNED AERIAL SYSTEMS (Must be enrolled in STEM - Unmanned Aerial Projects)**

#### **SECTION - 4-H SPACETECH – UNMANNED AERIAL SYSTEMS**

Purpose: The 4-H unmanned aerial systems or UAS project explores the world from above the trees and discovers new frontiers with UASs. UASs are commonly known as Unmanned Aerial Vehicles (UAVs) or drones. Members explore the uses and applications of unmanned aerial systems including how UASs link to other projects such as geology, robotics, electronics, crop science and many more.

1. The 4-H members must be currently enrolled in the 4-H STEM project to exhibit in this division.
2. Each exhibitor may enter one exhibit per class. Exhibit must have been completed during the current 4-H year.
3. The information that accompanies the UAS must be limited to the 4-H STEM Exhibit Information Form which is affixed to a 10" x 13" envelope. This envelope should NOT be attached to the UAS. This may be downloaded from [www.STEM4KS.com](http://www.STEM4KS.com). Any UAS exhibit not including this completed envelope will receive an automatic participation ribbon.
4. Exhibitor's name, county or district, age, and years(s) in project must be tagged or labeled in a prominent location on the exhibit, educational display, notebook, and/or poster.
5. Unmanned Aerial Systems that include or depict weaponry of any kind will be disqualified.
6. See the last section for full details about exhibiting posters, display boards and notebooks.
7. If modifications are made to the exhibit, a page should be attached noting those modifications.
8. If a safety violation is noted by the judge, superintendent, or other staff, the exhibit will receive a participation ribbon (at the judge's discretion).

#### **Division A – Intermediate, 9-13 years old**

- 5701** Unmanned Aerial System designed and constructed by exhibitor that is operated by a remote controlled device. The UAS must not be a mere modification of an existing kit or plan. You may not exhibit a UAS that is purchased off the shelf in this class.
- 5702** Practical application of an Unmanned Aerial System constructed from a commercial (purchased) kit. This includes the UAS, plus one or more of the following: video, notebook, poster, display board, etc. This class is separate from educational exhibits. A tangible use would be mapping Russian olive trees, eroded soils, and bindweed in fields, etc. There are also many other non-agricultural UAS uses that would be appropriate for this class.

#### **Division B – Senior, 14 years and older**

- 5706** Unmanned Aerial Systems designed and constructed by exhibitor that is operated by a remote controlled device. The UAS must not be a mere modification of an existing kit or plan. You may not exhibit a UAS that is purchased off the shelf in this class.
- 5707** Practical application of an Unmanned Aerial System constructed from a commercial (purchased) kit. This includes the UAS, plus one or more of the following: video, notebook, poster, display board, etc. This class is separate from educational exhibits. A tangible use would be mapping Russian olive trees, eroded soils, and bindweed in fields, etc. There are also many other non-agricultural UAS uses that would be appropriate for this class.

### **4-H STEM EDUCATIONAL EXHIBITS – POSTERS, NOTEBOOKS AND DISPLAY BOARDS**

Purpose: To allow 4-Hers to explore STEM outside the bounds of traditional projects for rockets, robotics, astronomy, computers and unmanned aerial systems. All posters, notebooks and display boards are listed in this section and have been removed from the individual sections to save space.

1. For notebooks, display boards, and posters, no additional exhibit information is required; no

- manila envelope is needed for these exhibits.
2. Exhibits in posters, notebooks and display boards must contain substantial supporting educational materials.
  4. Educational display boards, posters and notebooks should be creative and showcase details about the knowledge learned in the project during the current 4-H year. Value is placed on youth who can demonstrate how their skills have increased while completing the project. Each exhibit will be judged on uniqueness, creativity, neatness, accuracy of material, knowledge gained, and content. An exhibit judging score sheet will be available at [www.STEM4KS.com](http://www.STEM4KS.com). For example, a rocket that may have crashed may be made into an educational display or poster that tells a great story with many lessons learned.
  5. Follow copyright laws, citing all sources of information in a standard notation. Sources of information must be cited on the front of your exhibit, including all posters and educational display boards.
  6. Educational displays are not to exceed a standard commercial 3'x 4' tri-fold display board. Card tables for display are not required but can be used at the county only level. Care should be taken to use durable materials that will withstand Fair conditions.
  7. "Construction Kits" that are part of Educational displays must be contained in cases (tackle boxes, sealable containers, etc.) that may not be larger than 1' X 2' X 2' and must have a latch which securely keeps all components contained in the "Construction Kits". Other components are to adhere to appropriate dimensions as stated elsewhere.
  8. Educational Project notebooks must be organized in a 3-ring binder.
  9. Any three dimensional display exhibits may not be thicker than 1".
  10. Engines and igniters in rockets ARE NOT permitted with the exhibit and constitute an immediate disqualification. This is for safety reasons and includes both spent and live engines.
  11. Exhibitor's name, county or district, age, and year(s) in project must be tagged or labeled in a prominent location on the notebook and/or "Construction Kit." For educational displays and/or posters, the exhibitor's name, county, age, and year(s) in project must be tagged or labels on the back of the exhibit. Failure to label an exhibit may result in one ribbon placing deduction.
  12. Exhibits should possess the following qualities (in no particular order):
    - A Central theme
    - What you want others to learn
    - Be designed and constructed in a manner befitting the exhibit
    - Be something you are interested in
    - Be related to Astronomy, Computer Systems, Robotics, Rocketry, or Unmanned Aerial Systems and those characteristics described above
  13. If a safety violation is noted by the judge, superintendent, or other staff, the exhibit will receive a participation ribbon (exhibit at the judge's discretion).

### **Unmanned Aerial Systems - Novice – Ages 7-8**

- 5777 Novice Unmanned Aerial Systems Educational Display
- 5779 Novice Unmanned Aerial Systems Educational Notebook
- 5780 Novice Unmanned Aerial Systems Educational Poster

### **Unmanned Aerial Systems - Intermediate Division – 9-13 years old**

- 5781 Intermediate Unmanned Aerial Systems Educational Poster
- 5782 Intermediate Unmanned Aerial Systems Display Board
- 5783 Intermediate Unmanned Aerial Systems Notebook

**Unmanned Aerial Systems - Senior Division – 14 years and older**

- 5786 Senior Unmanned Aerial Systems Educational Poster
- 5787 Senior Unmanned Aerial Systems Display Board
- 5788 Senior Unmanned Aerial Systems Notebook