

## DIVISION 880 - GEOSPATIAL

PREMIUMS: Purple-\$4.50; Blue-\$4.00; Red-\$3.50; White-\$2.50

SET Geospatial is a diverse category that includes a variety of exhibits 4-H'ers can get involved in. Through participation in this category 4-H'ers will gain more knowledge about Nebraska's rich history and diverse geography. Take close note of the rules to ensure your exhibit qualifies. For more resources and materials in this category refer to the resource section at the bottom of the page.

- The name and county of each exhibitor should appear separately on the back of each board, poster or article and on the front cover of the notebooks so owner of the exhibit may be identified if the entry tag is separated from the exhibit.
  - Each individual is limited to one exhibit per class. All static exhibits must have received a purple ribbon at the county fair to advance to the State Fair.
  - Several classes require a display board which should be a height of 24 inches and not to exceed 1/4-inch thickness. A height of 24 7/8 inches is acceptable to allow for the saw kerf (width) if two 24 inch boards are cut from one end of a 4 foot by 8-foot sheet of plywood. Nothing should be mounted within 3/4 inch of the top or bottom of the board. (Example: Woodworking & Electricity.)
  - Fabricated board such as plywood, composition board, or particle-type lumber may be used for demonstration displays.
  - Demonstration boards should be sanded and finished to improve their appearance. The finish on a demonstration board will be judged as a woodworking exhibit.
  - Demonstration boards should include an overall title for the display, plus other necessary labeling.
  - Reports should be written using the scientific method whenever possible (Background, the Question or hypothesis, what you plan to do and what you did, Method used and observations, Results: what you learned. All reports should be computer generated and enclosed in a clear plastic cover. The reports should be attached securely to the display.
  - Reports should be written using the scientific method whenever possible (Background, the Question or hypothesis, what you plan to do and what you did, Method used and observations. Results: What you learned. All reports should be computer generated and enclosed in a clear, plastic cover. The reports should be attached securely to the display.
- Youth enrolled in Geospatial or GEAR TECH 21 may exhibit in any class within this division.

- H880001.\* **POSTER** – Create a poster (not to exceed 14" x 22") communicating a GPS theme such as: How GPS or GIS works, Careers that use GPS or GIS, How to use GPS, What is GIS, GPS or GIS in Agriculture, Precision Agriculture, or a geospatial topic of interest. SF299
- H880002.\* **4-H FAVORITE PLACES OR HISTORICAL SITE POSTER** - The 4-H exhibitor identifies a favorite place or historical site (including grave sites) in Nebraska. Exhibit should include latitude and longitude, digital picture, and local area map. Poster size should not exceed 14" x 22". SF272
- H880003.\* **GPS NOTEBOOK** - Keep a log of at least 5 places visited using a GPS enabled device. At least one site should be from a community other than where you live. For each site, record the latitude, longitude and elevation. Also include a description of the site, a paragraph explaining what was interesting about the site or finding it. Photos of each site and/or cache are optional but encouraged. SF300
- H880004.\* **GEOCACHE** - Assemble a themed geocache. Each geocache should be a water-tight container. It should include a log book and pencil for finders to log their visits and may include small trinket, geo-coins, etc. for the finders to trade. Documentation should include a title, teaser description and the geographic coordinates of intended placement. **Register the site at geocaching.com; include a print-out of its registry.** The entry may include a photograph of the cache in its intended hiding place. SF301
- H880005.\* **AGRICULTURE PRECISION MAPPING** - 4-Hers will assemble a notebook that will include a minimum of two (2) digital copies of various data layers that can be used in precision agriculture to identify spatial patterns and/or correlations (printed copies of websites were applications can be purchased is acceptable). A report of how the analysis of the various data will be used to make a management decision. SF302
- H880006.\* **4-H HISTORY MAP/PRESERVE 4-H HISTORY** - Nominate a Point of Interest for the 4-H History Map Project; include copy of submitted form in folder or notebook: To nominate a site for the 4-H history map, please go to <http://arcg.is/1bvGogV>. For more information about 4-H history, go to: [http://4hhistorypreservation.com/History\\_Map/](http://4hhistorypreservation.com/History_Map/). For a step by step video on nominating a point, please go to this link: <http://tinyurl.com/nominate4h>. Write a brief description of historical significance of 4-H place or person (a minimum of one paragraph).
- H880007.\* **GIS THEMATIC MAP** - Using any GIS software, create a thematic. Thematic maps can utilize any subject of interest to the 4-H'er. Example map would be Amelia Earhart's or Sir Francis Drake's voyage, population density maps, water usage maps, or 4-H project in Nebraska. Create GIS Map using data from books, and/or internet. Use reliable data, (U.S. Center or U.S. Census Bureau, etc.). Map any size from 8.5" x 11" up to 36" x 24"; should include Title, Base Map, Neat Line, North Arrow, and Legend. Identify the source of your information on the back of map.

## GEOSPATIAL RESOURCES

### GEOSPATIAL

Learn about Geography; Learn about Geographic Information Systems (GIS); Learn about Global Positioning Systems (GPS) URL: [https://4hcurriculum.unl.edu/index.php/main/program\\_project/132](https://4hcurriculum.unl.edu/index.php/main/program_project/132)

### DEPARTMENT ENERGY

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This category provides 4-H'ers a way to present their ideas about energy. Through participation in this category 4-H'ers will learn more about physics, friction, energy, and elasticity. In addition, participants will make a display to go along with their findings. For more resources and materials in this category refer to the resource section at the bottom of the page. For help getting started with this project contact your county 4-H office.

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### **DIVISION 900 - ALTERNATIVE/RENEWABLE ENERGIES**

- H900001.\* **CREATE and COMPARE ENERGY RESOURCES POSTER** – Poster should explore 2 alternative/renewable energy resources. Compare and contrast the 2 resources including two of the following information: amount of energy created, costs of production, usability of the energy, pros/cons of environmental impacts, etc. Posters can be any size up to 28" x 22".
- H900002.\* **EXPERIMENT NOTEBOOK** - Notebook will explore the scientific method involving alternative/renewable energy sources. Information required: 1) Hypothesis; 2) Research; 3) Experiment; 4) Measure; 5) Report or Redefine Hypothesis.
- H900003.\* **SOLAR as ENERGY DISPLAY** - Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of water. Examples include solar ovens, solar panels, etc.
- H900004.\* **WATER as ENERGY DISPLAY** - Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of water.
- H900005.\* **WIND as ENERGY DISPLAY** - Item should be the original design of the 4-Her. Include the item, or a picture if item is in excess of 6' tall or 2' x 2'. Include a notebook of why the item was designed and how it harnesses the power of wind.
- H900006.\* **OTHER NEBRASKA ALTERNATIVE ENERGY** - Notebook should explore Nebraska an alternative energy source besides wind, water, and solar power. Include information on type of power chosen, infrastructure for distribution, what resources are needed to create this alternative resource, cost of production, and potential uses of bio-products.