

Girl Scout Aviation STEM Seminar Guide

Distributed and Maintained by The Dallas Ninety-Nines

ABOUT THIS GUIDE

This guide is a compilation of ideas, procedures, recommendations, and references created by the Dallas Ninety-Nines and other chapters, and collected from various other sources. It will be updated as new material is submitted, and contributors will be noted.

- The Ventura County 99s provided the Women in History PowerPoint presentation.
- The Houston Chapter provided a portion of the Careers PowerPoint presentation.
- The Chicago Area Chapter was the source of various topic and seminar ideas, including rotating among stations rather than using a classroom, and providing space ice cream to accompany the discussion on space food evolution.

Accompanying materials reside on this web page separately from this document. All may be freely reproduced.

- Promotional Items
- Seminar Preparations
- Presentation Visual Aids
- Seminar Handouts
- PowerPoint Presentations

For questions, comments, or contributions, please contact Holly Barr and Janny Strickland:

Holly Barr: holly_ann_barr@sbcglobal.net

Janny Strickland: travelerjs@gmail.com

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Girl Scout Aviation STEM Seminar Guide

Introduction

Conducting Girl Scout Aviation STEM (Science, Technology, Engineering, Math) seminars can be one of the most rewarding activities your chapter will ever undertake. You have the opportunity to make a difference in the lives of young girls by inspiring them to pursue aviation-related careers, or to otherwise become interested in aviation.

As part of the Girl Scouts' experience, they embark on "Leadership Journeys", which encourage them to investigate areas that they care most about, and to ultimately make the world a better place. They explore a variety of interests along a Journey, from the arts to the outdoors, and in particular, STEM (Science, Technology, Engineering, and Math). Encouraging and educating girls in the STEM elements is a major thrust of the Girl Scout organization.

Aviation addresses all STEM elements. Thus, our passion and therefore our seminars align well with the major Girl Scout initiatives. Examples:

- Science: Meteorology
- Technology: Navigational aids
- Engineering: Aerodynamics
- Mathematics: Plotting a course and calculating time, distance, fuel burn, and weight and balance

This guide will provide your chapter with some information necessary to get started on this most rewarding venture.

Designing Your Seminar

Your seminar should consist of short segments that are approximately 20 minutes long. Most topics should adhere to the STEM elements: Science, Technology, Engineering, and Math. Examples:

Juniors and Cadettes

- Parts of the plane (Engineering)
- Aerodynamics (Engineering)
- Weather (Science)
- Flight planning - time, distance, fuel requirements (Math)
- Navigation methods (Technology, Math)
- Space program spinoffs (Technology)

Cadettes

- Weight and balance (Math)
- Basic instruments (Technology)
- Airspeeds (Math)
- Airport patterns (Winds - Science)

Other Topics and Activities

- Women in aviation history
- Careers
- Phonetic alphabet and tail numbers
- Visit a tower

- Fly balsa airplanes
- Preflight a plane and visit the cockpit
- Space food evolution, ending with samples of space ice cream and fruit
- Simulate a dialog with an air traffic controller in a tower

Girl Scouts find the phonetic alphabet interesting and like to spell their names using it. This exercise is a good ice-breaker. Running a slide show featuring information about famous women aviators engages girls as troops are arriving for the seminar.

Space ice cream and fruit are readily available and are relatively inexpensive. Only small samples are necessary, and can be served in small paper or plastic cups purchased at the grocery store. You can get up to ten samples per package. A good source is:

Funky Food Shop
 8 Maple Street, #5
 Port Washington, NY 11050
 funkyfoodshop.com
 (516) 767-1007

Gaining Program Approval

Once you have determined the content of your seminar, you might need approval from your Regional Girl Scout Program Manager before presenting it to a Girl Scout troop. Standards differ across regions. Thus, a seminar that is approved in one region may not meet the standards of another region. Some regions may not require approval. Program Managers are typically eager to meet with vendors to answer questions, review proposed programs, and outline procedures required to ensure compliance, if required. Ask if there are special requirements to be listed as a "STEM" program.

You can locate the Girl Scout Council for your area at this site:

<http://www.girlscouts.org/councilfinder>

After you learn the standards for your region and comply if necessary, you can begin to make plans to conduct your seminar. You will be known as a "program provider" or "vendor".

Attracting an Audience

There are several ways to entice troops to take an interest in your seminar. First, give your seminar a catchy title. The Dallas Chapter calls their Junior Girl Scout seminar "Flying IS for Girls". The Cadette version is "Pathways to Flight". Here are some ways to advertise your seminar:

- Girl Scout Kickoff: Many Girl Scout Regions hold an annual Kickoff just prior to the beginning of their fiscal year, which coincides with the school year. The Kickoff is attended by troop leaders from the entire region, often with several hundred present.

The Girl Scout Council invites vendors and provides tables to distribute brochures, descriptive seminar flyers, or other items related to the seminar. You will want to develop a takeaway handout with a description of and contact information for your program. Do not pass out registration forms as you will want to control the number of invitations you extend for each program so as not to oversubscribe them.

This is one of the best ways to attract an audience for your seminar. Troop leaders will be eager to provide contact information so that you can notify them when space becomes available in one of your seminars.

There may be a cost for promoting your program at this event.

- **Regional Program Listing:** This is the first place troop leaders look when planning the activities in which their troops will participate in the coming year. Your chapter can be listed by applying with your regional Girl Scout Council and complying with their program requirements, if necessary.

It's typically better to provide an email address rather than a phone number for troops to use to contact you. This way, you will have a written record of the contact which is helpful for making lists of troops and in case there's any question about the order in which troops contacted you.

There may be a cost for listing your program.

- **Presentations to Girl Scout Troops:** Arrange to be on the agenda of troop or service unit meetings to introduce your seminar.
- **Chapter Website:** Once you have developed your seminar, list it on your website along with any planned seminar dates. Make sure to add "Girl Scout Seminar" or similar verbiage to your search engine optimization list so that troop leaders will find your site when looking for troop activities. Update the website as seminars fill or dates or locations change.

If possible, include a form on your website where troop leaders can submit information such as name, email address, age level of troop, number of girls, etc. Set up the form so that it will be emailed to your chapter's program coordinator when the troop leader submits it.

Determining Seminar Site

The site will depend on the size of the audience, available location, and the format of the seminar.

- **Presentations with breakout sessions for hands-on activities:** The site should have a conference room, auditorium, or other location for the presentation parts, and ample space for the other activities. These activities could include group work sessions and flying balsa airplanes.

Examples would be an FBO willing to donate the use of their conference room, or an aviation-themed museum with an auditorium. The FBO site would lend itself to activities such as flying balsa airplanes, visiting the tower, and examining a small plane. The museum might have an area with tables where small groups could gather for work sessions and might provide docent-guided tours.

- **Rotating sessions among topic stations:** The site could be a hangar large enough for approximately six or seven groups spaced so as to avoid interference. The groups rotate among the stations. Hands on activities are included in the rotation.

Reserve the site well in advance of the seminar. If a control tower visit will be included, be sure to notify the tower manager prior to the seminar, and request the visit. Tower

managers might schedule an additional operator that day so that tower operations and safety won't be compromised by the visit.

For seminars at museums, any admission charge could be incorporated into the seminar fee and passed along to the museum as a donation. Typically museums will offer group discounts.

Registration

Be realistic about the number of girls you can accommodate in each seminar. You may want to begin with smaller groups and work your way up, depending on the facilities available and the number of Ninety-Nines willing to participate.

Offer spots to troops in the order they contacted you and give them specific deadlines for submitting their registration forms and payment. Allow at least a couple months for this process before your program, if possible. Troops typically set their calendars early in the school year, so it's best to open registration at that time.

Once you begin presenting seminars, your chapter will most likely develop a good reputation among troop leaders. If you have more requests for seminars than you can accommodate during the fiscal year, maintain a waiting list for the following year.

When you set your seminar schedule at the beginning of the fiscal year, invite the troops from the prior year's waiting list in order of request date.

Some troops leaders place their troops on the waiting list when the girls are Daisies or Brownies so they will have a place in a seminar by the time they become Juniors.

Seminar Equipment and Materials

- Group Presentations: If you will be presenting the topics to the entire group, you will need:
 - ✓ A laptop or other device capable of navigating the slide show
 - ✓ Audio-visual equipment with appropriate cables for your laptop
 - ✓ Appropriate room lighting
 - ✓ A screen for showing the slides
 - ✓ A pointing device or laser pointer

Test the hardware and presentation scenario and flow in advance of seminar day to avoid unpleasant surprises. Be prepared with a backup plan in case the technology fails.

- Stations: If you will be conducting the seminar in a large hangar with a station for each topic, the stations should be far enough apart to avoid interference. One of the stations should be a refreshment break.

Presenters and Other Jobs

Once the list of seminar topics has been established, allow chapter members to select one or more that interest them the most. It is advisable to have at least two members prepared to present each topic in order to provide backup in case the primary presenter must cancel at the last minute.

A PowerPoint slide show provides an easy way to cue the presenter and to keep the pace of the seminar moving. Each presenter should review her parts of the slide show well in advance of the seminar so there will be no surprises on seminar day. Designate one person

to navigate the slide show for the presenters, and devise a subtle cue so the navigator will know when to advance the slides.

Other Jobs

In addition to presenters, you will need:

- Greeters to welcome troops at the door
- Welcome Table workers to sign troops in and give name tags
- Escorts to the tower
- Monitors for airplane walkaround
- Assistants for distributing handouts
- Assistants for balsa plane flying
- Refreshment preparers
- Work session assistants
- Time keeper
- Assistants to clean the areas after the seminar
- Troop departure attendants

Handouts

Suggested handouts:

- Parts of the Airplane
- Back issues of 99s News
- 99s brochures
- Navigation Basics
- Sample VFR Chart segment
- Phonetic Alphabet
- Six Pack and/or PFD Instruments
- Balsa Planes
- Rulers
- Pencils
- Pens
- Space Program Spinoffs
- Aviation Careers
- Aviation Websites
- Program Evaluation

Handout Resources

- Ninety-Nines International - 99s Brochures and 99s News. Although the magazines will be free of charge, you must pay for shipping in advance. The rate will be for the standard medium size U.S. Postal Service shipping box.
- State Department of Transportation, Aviation Division - Planes, rulers, pencils
- AOPA - PATH program on website with curriculum and educational articles
- Space Program Spinoffs - Online searches will result in many interesting articles

Refreshments

The Girl Scouts will need a break with refreshments approximately halfway through the seminar. Refreshments can consist of:

- Individual bags of cookies or other snacks
- Home made cookies or coffee cake
- Bottled Water
- Individual Juice boxes

The refreshments should minimize the possibility of a mess. It is advisable to determine in advance if any child has allergies, and to alert the troop leader to have the child bring her own refreshments.

Fees

The fee should be in the \$10 - \$15 range per Girl Scout. View the list of programs offered in your Girl Scout Council directory to determine customary rates for half-day offsite programs.

Some chapters charge a minimal amount (\$3 - \$5) for adults if they will be partaking of refreshments and attending the presentations with the girls.

The fee should include the seminar, handouts, a certificate, a patch, refreshments, and an entry fee to a museum, if applicable.

Ninety-Nines Aviation Stem Patch

A Ninety-Nines Aviation STEM Patch has been designed and is available for any chapter to use. The cost varies with the volume ordered. Contact information:

Plano Pin Company
1410 Summit, Suite 3
Plano, TX 75074

Phone: 972-867-5152
Fax: 972-692-5396
e-mail: orders@planopin.com
www.planopin.com



Certificates

The Girl Scouts are proud to display a certificate showing that they attended your seminar. Blank certificate paper is inexpensive, and can be purchased at office supply stores. The example in list of handouts was purchased at Staples at \$6.99 for 100 sheets. Seals are also inexpensive, and are sold in packets.

Evaluations

You can gauge the success of your seminar by requesting that the Girl Scouts and the troop leaders complete separate evaluations. The perspectives will be very different, and the combined results will indicate whether the seminar was enjoyable, educational, beneficial, and worth the trip, time, and money. You will also learn the most and least popular topics, and you will receive suggestions on how to improve the seminar the next time your chapter presents it.