

# Above and Beyond

A GSSJC Interest Project Award

Developed by the Participants of the Aviation Exploration Leadership Institute

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## Skill Builders

- 1.) Learn about the different types of licenses offered by the FAA, and the requirements for each.
- 2.) Locate the nearest airport, and find out what types of aircraft they can accommodate. Find out if they offer private flight instruction.
- 3.) Learn how weather affects aviation. Follow the weather patterns in your area, and see how they would affect flying. Find out what FAA licenses you would need, and what extra precautions you would take to fly in different weather conditions.
- 4.) Learn how to use a sectional, and how to read a compass in directional degrees. Draw up a mock flight plan between your hometown and another airport.
- 5.) Take a basic introductory ground school course, or watch an instructional video teaching the basics of flight.
- 6.) Catch a ride! Travel on an aircraft!
- 7.) Take a guided tour of an airport in your area. If possible, include a visit to the hanger.
- 8.) Make a poster or other presentation explaining how the "unseen forces" of lift, weight, thrust and drag affect flight.
- 9.) Learn the vocabulary of aviation. Examples of some of the terminology you might want to learn are:

Sectional	Airship
VFR/IFR	Knots
Flight Plan	Altimeter
Single / Multi Engine	Log Book
Glider	FAA
- 10.) Research the origins of the word "Aviation."

## **Technology**

- 1.) Make a timeline of major technological advances in the field of aviation over the past 100 years.
- 2.) Try a computer simulator and/or computer game about aviation.
- 3.) Visit the Johnson Space Center (or a similar facility) to learn how aviation and aeronautics are involved in the space program.
- 4.) Learn about the radio and transponder in an airplane, and how they are used in an emergency situation. What frequency should the radio be tuned to? Where should the transponder be set? Role-play with a friend the conversation you would have over the radio in an emergency situation.
- 5.) Observe the aerodynamics of at least 3 different types of paper airplanes. Which one goes the fastest? The farthest? The highest? Why?
- 6.) When was the first hot air balloon used? How has ballooning changed since then? How were hot air balloons used during World War One?
- 7.) Learn how air ships (blimps) are inflated, and why hydrogen is no longer used.
- 8.) Learn the difference between how a helicopter hovers and how an airplane flies.
- 9.) Learn about the backup systems in the aircraft of your choice. (ie, back up systems for lowering landing gear, extra fuel tanks, etc.)

## **Career Exploration**

- 1.) Research 5 careers in the field of aviation, and if possible, invite a woman from one of those career fields to speak to your troop or group. At least two of these careers should be land-based. (ie, sales, charter reservations, controller, mechanic, etc.)
- 2.) Research the history of a women's aviation group, such as the 99s. Find out their main focus, why they formed, and what the membership requirements are.
- 3.) Interview a female aviator. Find out why she became involved in her field, what challenges she faced, and what obstacles she had to overcome.
- 4.) Learn about three different types of pilots, and the FAA regulations for each.
- 5.) Learn about the different types of air traffic controllers involved in a controlled flight from a major airport. If possible, visit a control tower, or invite an air traffic controller to speak with your troop or group.

6.) Find out about the educational opportunities available in the aviation field, and what schools offer FAA-certified programs in aviation-related careers.

### **Service Projects**

- 1.) Volunteer to work at a balloon festival or air show.
- 2.) Volunteer at a local public airport. Clean a hanger, wash airplanes, etc.
- 3.) Build a model airplane, balloon, or kite with a group of younger girls. Explain how the real thing works, then take your model for a test flight!
- 4.) Collect books and toys about aviation for a local children's hospital.
- 5.) Help host an aviation day for younger girls. Include activities such as a skit about the history of women in flight (including Juliette Low!), guest speakers, building model aircrafts, or learning the aeronautical alphabet.
- 6.) Visit and/or host a party for veterans who have flown for our country.
- 7.) Teach a troop or group about volunteer opportunities available, such as the Civil Air Patrol, as a Missionary Pilot, or in the Coast Guard.