

# Brownie Aviation Badge

Do you look up when you hear something fly over your house? Get ready to find out about flying and how much fun aviation can be.

- Steps:
- Preflight
  - Taxi
  - Takeoff
  - Flight
  - Landing

Purpose: When I finish this badge I'll be able to tell others about flying aircraft and what aviation opportunities are ahead.

Preflight: Choices—Do one

- Draw a picture of three different kinds of aircraft.
- How do hot air balloons fly? Investigate what makes them rise. Launch a floating sky lantern to demonstrate this concept. (You can make one of these)
- Learn the phonetic alphabet language of aviation. Spell your name using that language.

- A Alpha
- B Bravo
- C Charlie
- D Delta
- E Echo
- F Foxtrot
- G Golf
- H Hotel
- I India
- J Juliet
- K Kilo
- L Lima
- M Mike
- N November
- O Oscar
- P Papa
- Q Quebec
- R Romeo
- S Sierra
- T Tango
- U Uniform
- V Victor
- W Whiskey
- X Xray
- Y Yankee
- Z Zulu

Now that I've earned this badge, I can give service by:

- Sharing my knowledge of aviation with others.
- Showing younger scouts what I've learned about careers in aviation.
- Inspiring friends to discover the skies.

Written by Kentucky Bluegrass Ninety-Nines 2017  
 The Ninety-Nines are an international organization of women pilots that promotes advancement of aviation through education, scholarships and mutual support while honoring our unique history and sharing our passion for flight.  
 To order this badge contact: tgsanders@att.net

**Valentina Vladimirovna Tereshkova** is the first woman to have flown in space, having been selected from more than 400 applicants and five finalists to pilot the Russian spacecraft Vostok 6 on June 16, 1963. She completed 48 orbits of the Earth in her three days in space.

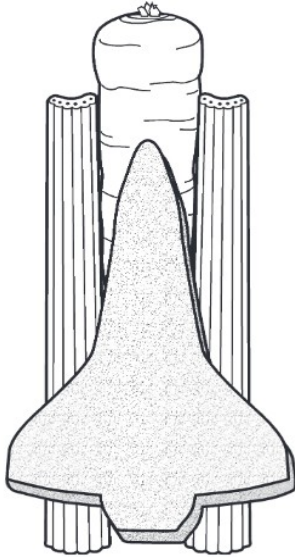
You must be fluent in Russian to be an American astronaut today.

**Taxi:** Choices—Do one

- Make and fly three different designs of paper airplanes OR  
Put together a simple model glider or make your own out of balsa wood. Can you make your glider fly straight, stall, loop, bank right, and bank left? OR  
Make and fly your own kite. What type of wind makes the kite fly best? What can you try to make the kite better?
- Make a list of at least ten different aviation jobs. Find out more about two jobs (Talk to, interview, meet someone)
- Learn ten new aviation words. Make a word search puzzle to share with others.

**Flight:** Choices—Do one

- Tour an airport. Does it have a control tower? What businesses are there? Is there a flight school? How many runways does it have and how are they numbered? Interview the airport manager. Complete the scavenger hunt on the back page.
- Visit a hangar where aircraft are repaired. Talk to a mechanic about the tools used and schooling required for this job.
- Have races for different kinds of model aircraft, such as gliders and airplanes. Give awards for different achievements, such as longest flight, best stunt, or most accurate flight. OR  
Hold a kite-building workshop. Experiment with different kite styles. OR  
Host a kite flying festival. Compete to see who can control their kite best.

EDIBLE SPACE SHUTTLE	
	<p>Materials: 1 carrot, cleaned and cut lengthwise in half, 2 equal size pieces of celery, 1 slice of bread, knife, peanut butter/marshmallow cream/softened cream cheese, template of the orbiter, paper plates.</p> <p>Background: A space shuttle is made of four main parts. Each shuttle has two solid rocket boosters (SRBs). The SRBs burn a solid fuel during the first minutes of launch and ascent. Once they burn out, they drop off and parachute into the ocean. A recovery team retrieves them for reuse in next launch. The external tank (ET) is a large fuel tank that feeds oxygen and hydrogen to the Orbiter's main engines during launch and ascent. When the main engines burn the oxygen and hydrogen, water is produced and leaves the engines as plumes of steam. The Orbiter is the part of the shuttle that carries the astronauts and payload. At the end of a mission, the Orbiter returns to earth, relying on the special tiles on its belly to safely get through the intense heat of reentry.</p>

Flying in small private planes, helicopters, blimps or hot air balloons are not approved as Girl Scout Program activities.

**Sally Ride** joined NASA in 1978 and became the first American woman in space in 1983. She was the third woman in space overall, after USSR cosmonauts Valentina Tereshkova (1963) and Svetlana Savitskaya (1982). Sally remains the youngest American astronaut to have traveled to space, having done so at the age of 32. After flying twice on the Orbiter *Challenger*, she left NASA in 1987.



What different animals have gone to space?  
Dogs, fruit flies, mice, monkeys, chimpanzees, guinea pigs, rabbits, frogs, and lots of reptiles.

**Takeoff:** Choices—Do one

- Visit NASA's website [www.nasa.gov](http://www.nasa.gov) and find out what missions are underway or planned for the future. Be sure to check out the "NASA kids" link.
- Make an edible space shuttle.
- Aeronautical charts are used to navigate from take off to landing. Access an aeronautical chart through [FAA.gov](http://FAA.gov) or your local flight school. Study the legend and learn to find 10 symbols on the chart. (Above and beyond: Can you plan a flight?)  
To order a paper sectional map—[FAA.gov/air\\_traffic/flight\\_info/aeronav](http://FAA.gov/air_traffic/flight_info/aeronav)

**Landing:** Choices—Do one

- What types of food do they eat in space? Do you have the right stuff to be an astronaut? Go online at [www.quest.arc.nasa.gov/women/intro.html](http://www.quest.arc.nasa.gov/women/intro.html) and see what it takes.
- Visit the home page of the Ninety-Nines ([www.ninety-nines.org](http://www.ninety-nines.org)) an international organization of women pilots. Find out more about this group and if they have a chapter near you and how they benefit women in aviation in the community at large.
- Learn more about some innovative women in aviation such as Bessie Coleman, Amelia Earhart or Sally Ride. How did they pave the way for future girls and women?

Aircraft are used in many service organizations:

- Pilots N Paws transport of rescue animals
- Medical air transport and air ambulance
- Ultralight bird migration flights
- Missionaries reaching isolated populations
- Forest fire monitoring and control

At the airport:  
Is there a control tower?  
Who controls when there is no tower?  
What does it mean to be Pilot-In-Command (PIC)?