

(Please Print) Scout's Name _____ Phone _____ Class Time _____

Address _____ City _____ Zip _____

**Aviation
Requirements Sheet
Merit Badge Powwow 2009**

The scout is to read the **Aviation Merit Badge pamphlet before the Powwow** (2006 edition or later). Some requirements may take up to 90 days to complete before coming to the Powwow. Read all the requirements below and bring necessary items to guarantee passing off the merit badge on the day of the Powwow. Bring to class paper, pen or pencil, and any other items asked for. Write your name, merit badge and class time (9:00 or 1:00) on **every** paper or project. (If there are any questions pertaining to requirements, the most recent Boy Scout Requirements handbook will always be used).

Recommended Requirments to complete before Powwow

- 3. Do ONE of the following:
 - a. Build and fly a fuel-driven or battery-powered electric model airplane. Describe safety rules for building and flying model airplanes. Tell safety rules for use of glue, paint, dope, plastics, fuel, and battery pack.
 - b. Build a model FPG-9. Get others in your troop or patrol to make their own model, and then organize a competition to test the precision of flight and landing of the models.
- 5. Find out about three career opportunities in aviation. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor at the Powwow, and explain why this profession might interest you.

Completed:

3 _____
Signature of counselor Date

5 _____
Signature of counselor Date

Fill out permission slip at the bottom of the next page before the Powwow

Requirments that will be passed off at the Powwow

- 1. Do the following:
 - a. Define "aircraft." Describe some kinds and uses of aircraft today. Explain the operation of piston, turboprop, and jet engines.
 - b. Point out on a model airplane the forces that act on an airplane in flight.
 - c. Explain how an airfoil generates lift, how the primary control surfaces (ailerons, elevators, and rudder) affect the airplane's attitude, and how a propeller produces thrust.
 - d. Demonstrate how the control surfaces of an airplane are used for takeoff, straight climb, level turn, climbing turn, descending turn, straight descent, and landing.
 - e. Explain the following: the recreational pilot and the private pilot certificates; the instrument rating.
- 2. Do TWO of the following:*
 - b. Under supervision, perform a preflight inspection of a light airplane.
 - c. Obtain and learn how to read an aeronautical chart. Measure a true course on the chart. Correct it for magnetic variation, compass deviation, and wind drift. Arrive at a compass heading.

Completed:

1 _____
Signature of counselor Date

2(1) _____
Signature of counselor Date

2(2) _____
Signature of counselor Date



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- e. On a map, mark a route for an imaginary airline trip to at least three different locations. Start from the commercial airport nearest your home. From timetables (obtained from agents or online from a computer, with your parent's permission), decide when you will get to and leave from all connecting points. Create an aviation flight plan and itinerary for each destination.
 - f. Explain the purposes and functions of the various instruments found in a typical single-engine aircraft: attitude indicator, heading indicator, altimeter, airspeed indicator, turn and bank indicator, vertical speed indicator, compass, navigation (GPS and VOR) and communication radios, tachometer, oil pressure gauge, and oil temperature gauge.
 - g. Create an original poster of an aircraft instrument panel. Include and identify the instruments and radios discussed in requirement 2f.
4. You will be doing ONE of the following at the Powwow:*
- a) Visit an airport. After the visit, discuss on how the facilities are used, how runways are numbered, and how runways are determined to be "active."
 - c) Visit an aviation museum or attend an air show. Discuss on your impressions of the museum or show

4 _____
 Signature of counselor _____ Date _____

I give permission for my son _____ to be transported from the BYU-Idaho campus to the Rexburg airport, and back again for the purpose of completing the Aviation merit badge on the second week of the Merit Badge Powwow. I understand that the vans will be BYU-Idaho vans and will be driven by qualified drivers.

_____ Date _____ Parent or Guardian Signature _____

(If you are uncomfortable with this arrangement, please call our office at 496-2337 or 496-1040, and we will move your son to another merit badge class.)

*** There are other requirements that you can do before hand and bring to Powwow if you desire. See requirement hand book to find other requirements**



Aviation Instruments Worksheet

Do without use of book.



1. ___



2. ___



3. ___



4. ___



5. ___



6. ___



7. ___



8. ___



9. ___



10. ___



11. ___



12. ___