Weather Merit Badge Worksheet
Hiller Aviation Museum

This worksheet is not required but is designed to help you complete the Aviation Merit Badge requirements. No one can add to or subtract from the Boy Scout Requirements #33215. Requirements revised 2013. Worksheet revised November 2013.

The Hiller Aviation Museum program addresses sufficient requirements to complete the Weather Merit Badge except for Requirement 2 and 9A, which are completed by the Scout at home following the program. Only those requirements included in the Hiller Aviation Museum program are included. Requirements 2 and 9A must be met through home study and its separate observation sheet approved by a Merit Badge Counselor to qualify for the Weather Merit Badge.

Scout’s Name: ________________  Unit: ________________
Counselor: ________________  Hiller Aviation Museum
(650) 654-0200

1. Define meteorology. Explain the difference between weather and climate, and how weather affects agriculture, maritime transport, aviation and outdoor construction. Describe the value of weather forecasts to each of these groups.
2. Identify 5 dangerous weather-related conditions. What safety rules apply to each?

a. 

b. 

c. 

d. 

e. 

Explain the difference between severe weather watches and warnings, and discuss the relevant safety rules.

Discuss the safety rules for weather-related conditions with your family. Obtain the signature of an adult family member who participated in the discussion on the Weather Observation Log and submit it to your counselor for review.
3. Explain the difference between high and low pressure systems, and the relationship of each to fair and poor weather.

High Pressure: _____________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Low Pressure: ______________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Draw a cross-section of a cold front and a warm front showing the location and movements of the cold and warm air, the frontal slope, the location and type of clouds associated with each type of front, and the location of precipitation.

<table>
<thead>
<tr>
<th>Cold Front</th>
<th>Warm Front</th>
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4. Tell what causes wind, why it rains, and how lightning and hail are formed in a cumulonimbus cloud.

Wind: _____________________________________________________________
__________________________________________________________________________
Rain: _____________________________________________________________
__________________________________________________________________________
5. Identify and describe clouds in the low, middle and upper levels of the atmosphere. Relate these to specific types of weather.

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6. Diagram the water cycle and label its major processes.

______________________________________________________________________________
Solar Energy - Evaporation - Condensation - Precipitation - Accumulation
7. Identify some human activities that can alter the environment, and describe how they affect the climate and people.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

8. Describe how the tilt of Earth’s axis helps determine the climate of a region near the equator, near the poles, and across the area in between.

Polar: ______________________________________________________________________
______________________________________________________________________________

Equatorial: __________________________________________________________________
______________________________________________________________________________

Temperate: ___________________________________________________________________
______________________________________________________________________________
9. **PART A:** Build a weather station with one of the following instruments:
   
   a. Wind Vane
   b. Anemometer
   c. Rain Gauge
   d. Hygrometer

   (Museum uses a-c + thermometer). Record weather data daily for seven consecutive days and compare to data acquired from local television, radio, or internet (with your parents’ permission) sources using the separate observation sheet. Live weather for the San Carlos area can be downloaded from the Hiller Aviation Museum’s weather station at [www.hiller.org](http://www.hiller.org) (click on “Local Weather” at top right of home page).

10. **PART A:** Prepare and present a talk of at least 5 minutes to a group of Scouts explaining the outdoor safety rules in the event of lightning, flash floods, and tornadoes.

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11. **Find out about a weather-related career opportunity that interests you. Discuss the training, education and responsibilities required for this position.**

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Scout Peer Presentations

My Hazard (Circle):

1. Lightning
2. Flash Flood
3. Tornado

My Assignment (Circle):

A. Describe Hazard
B. Safety Rules

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