

WEATHER

Merit Badge Requirements

- 1) Define meteorology. Explain how the weather affects farmers, sailors, aviators, and the outdoors construction industry. Tell why weather forecasts are important to each of these groups.
- 2) Name five dangerous weather-related conditions. Give the safety rules for each when outdoors and explain the difference between a severe weather watch and a warning. Discuss the safety rules with your family.
- 3) Draw cross sections 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 types of clouds associated with the front, and the location of rain. Tell the differences between a cold front and a warm front.
- 4) Tell what causes wind, why it rains, and how lightning and hail are formed. Explain the difference between high and low pressure systems in the atmosphere and tell which is related to good and poor weather.
- 5) Identify and describe clouds in the low, middle, and upper levels of the atmosphere. Relate these to specific types of weather.
- 6) Draw a diagram of the water cycle and label its major processes. Explain the water cycle to your counselor.
- 7) Define acid rain. Identify which human activities pollute the atmosphere as well as the effects such pollution can have on people.
- 8) Do ONE of the following:
 - A) Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for 1 week using information from this instrument as well as from other sources such as local radio and television stations or NOAA Weather Radio. The following information should be recorded at the same time every day: wind direction and speed, temperature, precipitation, and types of clouds. Be sure to make a note of any morning dew or frost. In the log, also list the weather forecasts from radio or television at the same time each day and show how the weather really turned out.
 - B) Visit a National Weather Service office or talk with a local radio or television weathercaster, private meteorologist, local agricultural Extension service office, or university meteorology instructor. Find out what type of weather is most dangerous or damaging to your community. Determine how severe weather and flood warnings reach the homes in your community.
- 9) Do ONE of the following:
 - A) Give a talk of more than 5 minutes to your unit explaining the camping safety rules in the event of lightning, flash floods, and tornadoes. Before your talk, show your outline to your counselor for approval.
 - B) Read several articles about acid rain and give a prepared talk of more than 5 minutes about the articles to your unit. Before your talk, show your outline to your counselor for approval.

Requirement 1

Define Meteorology: _____

How does the weather affect farmers? _____

How does the weather affect sailors? _____

How does the weather affect aviators? _____

How does the weather affect the outdoor construction industry? _____

Why are weather forecasts important to farmers? _____

Why are weather forecasts important to sailors? _____

Why are weather forecasts important to aviators? _____

Why are weather forecasts important to the outdoors construction industry? _____

Requirement 2

Name five dangerous weather-related conditions and give the safety rules for each when outdoors.

Condition: _____ Safety Rules: _____

Condition: _____ Safety Rules: _____

Condition: _____ Safety Rules: _____

Condition: _____ Safety Rules: _____

Condition: _____ Safety Rules: _____

Explain the difference between a severe weather watch and a warning: _____

Requirement 3

Use the back of this sheet, or an additional piece of paper (attach it to this worksheet) to draw cross sections of a cold front and a warm front.

Show the following:

___ Location of cold & warm air ___ Movements of the cold & warm air ___ Frontal Slope ___ Location of clouds

___ Type of cloud associated with front ___ Location of rain

Show your drawing to your counselor.

What is the difference between a cold front and a warm front? _____

Requirement 4

What causes wind? _____

Why does it rain? _____

How is lightning formed? _____

How is hail formed? _____

What is the difference between high and low pressure systems in the atmosphere? _____

What type of pressure is related to good weather? _____

What type of pressure is related to poor weather? _____

Requirement 5

What type of clouds would you find in the low levels of the atmosphere? _____

Description: _____

What kind of weather is related to these types of clouds? _____

What type of clouds would you find in the middle levels of the atmosphere? _____

Description: _____

What kind of weather is related to these types of clouds? _____

What type of clouds would you find in the High levels of the atmosphere? _____

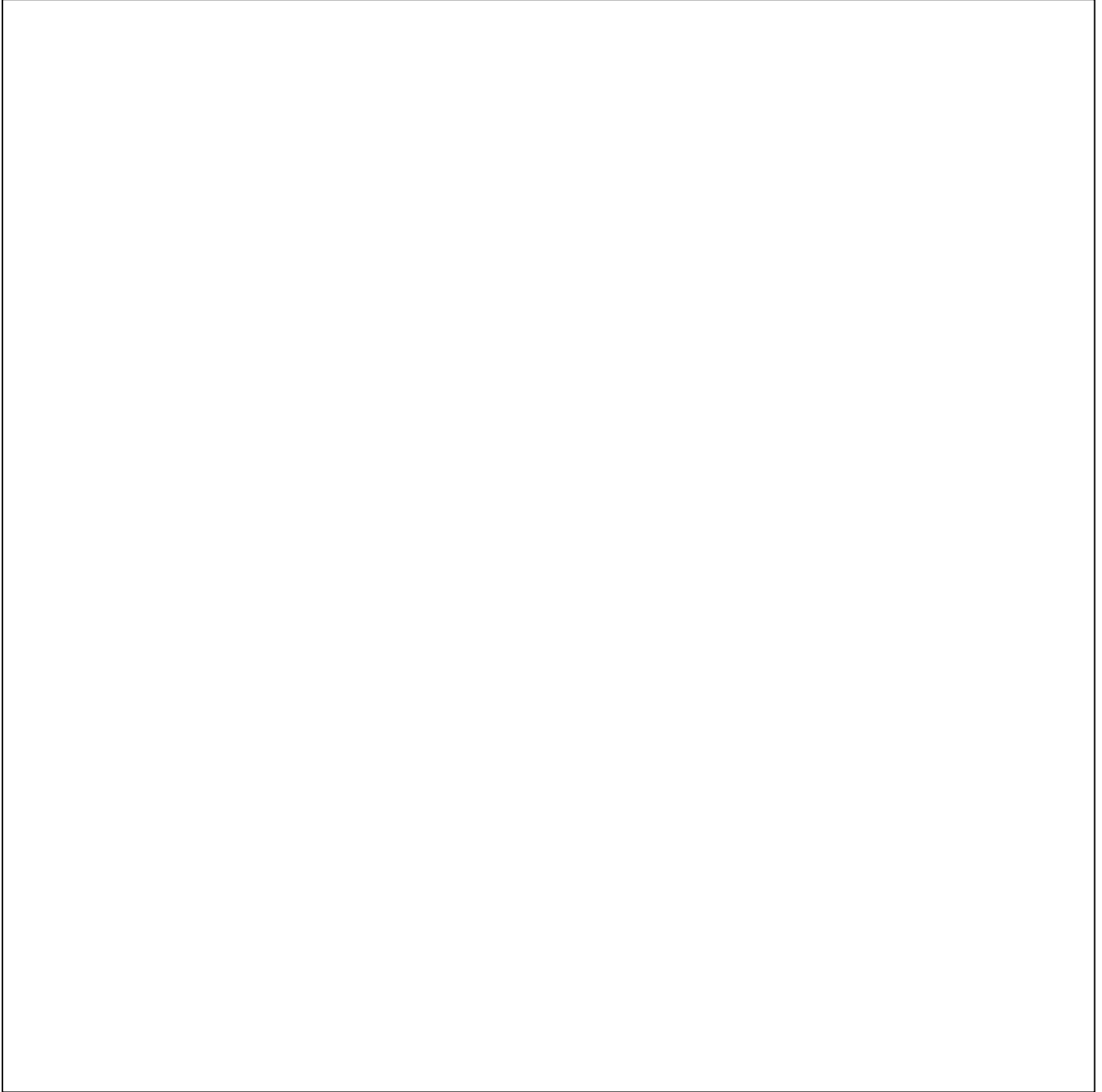
Description: _____

What kind of weather is related to these types of clouds? _____

Demonstrate to your counselor that you are able to identify these clouds.

Requirement 6

Use the area below to draw a diagram of the water cycle. Label all of its major processes.



Show your drawing to your counselor.

Give an explanation of the water cycle: _____

Requirement 7

What is acid rain? _____

Identify some human activities that pollute the atmosphere and the effects the pollution can have on people:

Pollution causing activity: _____

Effect of pollution: _____

Pollution causing activity: _____

Effect of pollution: _____

Pollution causing activity: _____

Effect of pollution: _____

Pollution causing activity: _____

Effect of pollution: _____

Pollution causing activity: _____

Effect of pollution: _____

Requirement 8

You have been given two options for this requirement. Select and complete one of them.

If you selected **Option A**:

Make one of the following instruments: wind vane, anemometer, range gauge, or hygrometer.

Which instrument did you build? _____

***NOT REQUIRED FOR BADGE**

Briefly describe how you built your instrument: _____

_____ Show your instrument to your counselor.

To complete this requirement you are asked to keep a daily weather log for a 1 week period. A sample log has been attached and you may use it if you choose. Or, you may choose to create your own log. Fill out the log daily for 1 week. Show the log to your counselor when completed.

(See Chart On Following Page)

Begin Date: _____	Wind Direction	Wind Speed	Temp	Precipitation	Types of Clouds Present	Dew Or Frost	Official Forecast	Actual Weather Conditions
Monday Time: _____								
Tuesday Time: _____								
Wednesday Time: _____								
Thursday Time: _____								
Friday Time: _____								
Saturday Time: _____								
Sunday Time: _____								

About what time each day did you record your observations? _____

Was your instrument successful at gathering data? _____

