



# WEATHER MERIT BADGE AT THE HILLER AVIATION MUSEUM



This workbook can help you but you still need to read the merit badge pamphlet.  
This Workbook can help you organize your thoughts as you prepare to meet with your merit badge counselor.

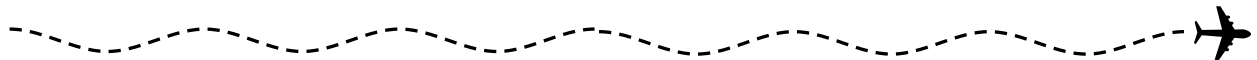
Merit Badge Counselors may not require the use of this or any similar workbooks.

You still must satisfy your counselor that you can demonstrate each skill and have learned the information. You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers. If a requirement says that you must take an action using words such as "discuss", "show", "tell", "explain", "demonstrate", "identify", etc, that is what you must do. No one may add or subtract from the official requirements found on Scouting.org.

The requirements were last issued or revised in **2024** • This workbook was updated in **September 2025**

**Name:** \_\_\_\_\_

**Troop:** \_\_\_\_\_



## 1. METEOROLOGY

Define meteorology.

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Explain what weather is.

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Explain what climate is.

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Discuss how the weather affects farmers, sailors, aviators, and the outdoor construction industry. Tell why weather forecasts are important to each of these groups.

**Farmers:**

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**Sailors:**

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**Aviators:**

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**Outdoor Construction:**

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## 2. WEATHER CONDITIONS

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

Condition #1:

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Condition #2:

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Condition #3:

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**Condition #4:**

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**Condition #5:**

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**Explain the difference between a severe weather watch and a warning.**

**Severe Weather Watch:**

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**Severe Weather Warning:**

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### 3. AIR PRESSURE

Explain the difference between high- and low-pressure systems in the atmosphere.

High Pressure Systems:

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Low Pressure Systems:

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Draw a line to connect the pressure system to the type of weather it is related to.

High Pressure Systems

Good Weather

Low Pressure Systems

Poor Weather

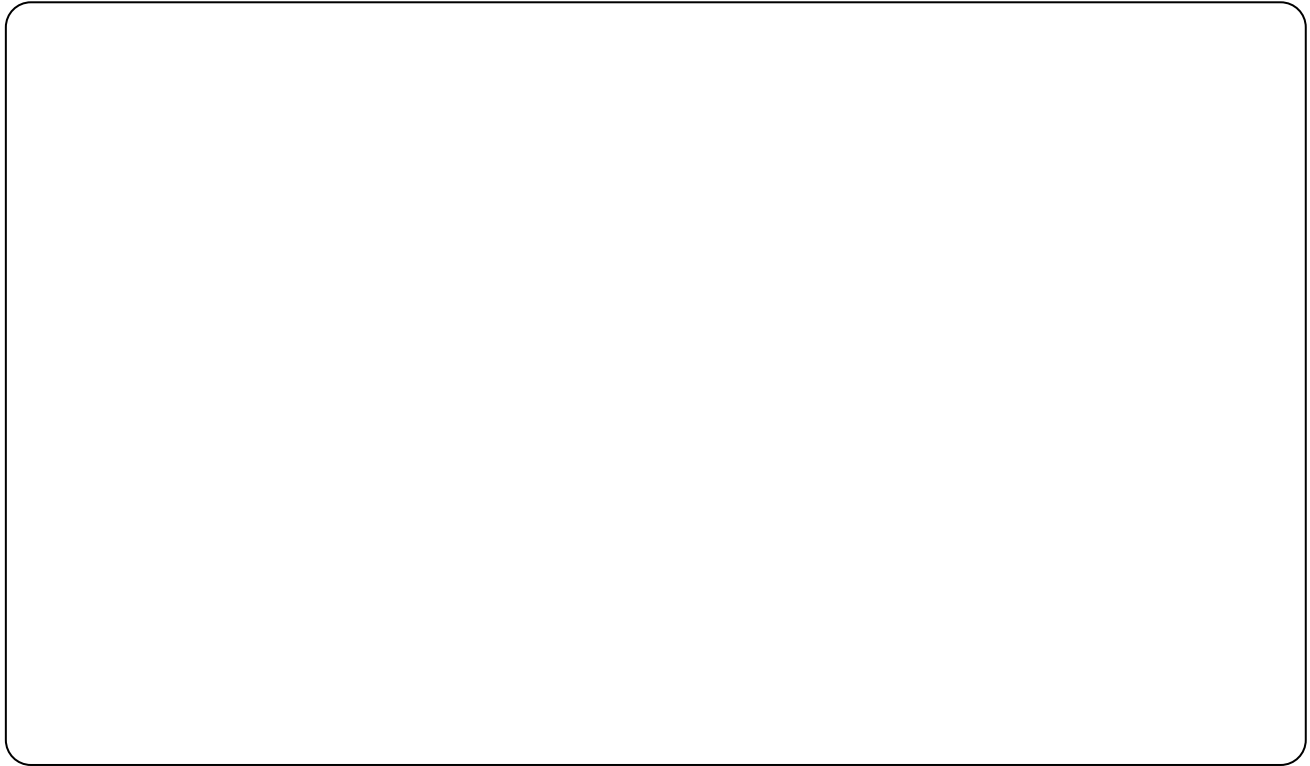
Draw cross sections of a cold front and a warm front, showing the location and movements of the cold and warm air, the frontal slope, the location and types of clouds associated with each type of front, and the location of precipitation.

Continue to next page for cold front drawing space.

# AIR PRESSURE FRONTS

## Cold Front

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 each type of front, and the location of precipitation.



## Warm Front



## 4. WEATHER

Tell what causes wind, why it rains, and how lightning and hail are formed.

What causes wind:

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Why does it rain:

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How is lightning formed:

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How is hail formed:

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## 5. CLOUDS

Identify and describe clouds in the low, middle, and upper levels of the atmosphere. Relate these to specific types of weather.

### Low Clouds

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### Middle Clouds

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### High Clouds

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Relate these to specific types of weather.

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## 6. WATER CYCLE

Draw a diagram of the water cycle and label its major processes. Explain the water cycle to your counselor.

WATER CYCLE



Explain the water cycle to your counselor.

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## 7. HUMAN IMPACT

Identify some human activities that can alter the environment, and describe how they affect the climate and people.

[illegible]

## 8. EARTH'S AXIS

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.

Near the equator:

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Near the poles:

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Across the area in between:

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## 9. Weather Activity

9A. Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations, NOAA Weather Radio All Hazards, and internet sources (with your parent's permission). Record the following information 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.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Date:							
<b>SCOUT'S WEATHER DATA</b>							
Time							
Cloud Types							
Dew/Frost							
Precipitation							
Temperature							
Wind Direction							
Wind Speed							
<b>WEATHER FORECAST BY OUTSIDE SOURCE (Web, App, TV, Radio, etc)</b>							
Time							
Source							
Precipitation							
Temperature							
Wind Direction							
Wind Speed							

Acceptable answers include: none, 0, n/a. As there are days without precipitation or clouds, etc.



**Scan the QR code to visit the Hiller Weather Merit Badge Homework page** for resources, instructions, and more. Also accessible from the Hiller Aviation Museum Scout webpage at [www.hiller.org](http://www.hiller.org)

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education@hiller.org • (650) 654-0200

## 10. WEATHER SAFETY CONDITIONS

Give a talk of at least five minutes to a group (such as your unit or a Cub Scout pack) explaining the outdoor safety rules in the event of lightning, flash floods, and tornadoes. Before your talk, share your outline with your counselor for approval.

[illegible]

## 11. WEATHER CAREERS

Find out about a weather-related career opportunity that interests you. Discuss with and explain to your counselor what training and education are required for such a position, and the responsibilities required of such a position.

### Training

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### Education

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### Responsibilities

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[illegible]

[illegible]



# WEATHER MERIT BADGE

## REQUIREMENTS FOR WEATHER MB



Always check [www.scouting.org](http://www.scouting.org) for the latest requirements.

1. Define meteorology. Explain what weather is and what climate is. Discuss how the weather affects farmers, sailors, aviators, and the outdoor 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. Explain the difference between high- and low-pressure systems in the atmosphere. Tell which is related to good and to poor weather. 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 each type of front, and the location of precipitation.
4. Tell what causes wind, why it rains, and how lightning and hail are formed.
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. 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.
9. Do ONE of the following:
  - a. Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations, NOAA Weather Radio All Hazards, and internet sources (with your parent's permission). Record the following information 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 officer, 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.
10. Give a talk of at least five minutes to a group (such as your unit or a Cub Scout pack) explaining the outdoor safety rules in the event of lightning, flash floods, and tornadoes. Before your talk, share your outline with your counselor for approval.
11. Find out about a weather-related career opportunity that interests you. Discuss with and explain to your counselor what training and education are required for such a position, and the responsibilities required of such a position.

# WEATHER MERIT BADGE AT THE HILLER AVIATION MUSEUM



## Fill out Blue Card as instructed.

**Information for Applicant**

- A merit badge application can be approved only by a registered merit badge counselor.
- You must have the application signed by a registered merit badge counselor (system) at the time of application.
- Turn in your application to your merit badge counselor. You will receive your emblem and certificate.

**Information for Counselor**

- Merit badge applications are approved by the merit badge counselor.
- The Scoutmaster (or other adult leader) must sign the application in the "Scoutmaster" column.
- You may not share your merit badge with anyone else.
- Valuable.

Requirement No. and letter	Date of approval	Counselor Initial	Requirement No. and letter	Date of approval	Counselor Initial
1	PROGRAM DATE		2		
3	PROGRAM DATE		9A		
4	PROGRAM DATE				
5	PROGRAM DATE				
6	PROGRAM DATE				
7	PROGRAM DATE				
8	PROGRAM DATE				
10	PROGRAM DATE				
11	PROGRAM DATE				

Barcode: 7 30176 34124 8

**APPLICATION FOR MERIT BADGE**

Name **YOUR NAME**

Address \_\_\_\_\_

City \_\_\_\_\_

is a registered \_\_\_\_\_

☐ Boy Scout ☐ Varsity Scout ☐ Venturer

of **Troop** No. **#**

Troop, team, crew, ship

District \_\_\_\_\_

Council \_\_\_\_\_

and is qualified to begin working for merit badge noted on the reverse side.

Date \_\_\_\_\_ Signature of unit leader \_\_\_\_\_

**BOY SCOUTS OF AMERICA®**

34124A  
2003 Boy Scouts of America

At a minimum, all the highlighted sections should be filled out with your info or the included text.

## Fill out Blue Card as instructed.

The applicant has personally appeared before me and demonstrated to my satisfaction that he has met all requirements for the (please print) **Weather** Merit badge.

Name of counselor \_\_\_\_\_

Address of counselor **601 Skyway Road**  
**San Carlos 94070**  
City **(650) 654-0200** Zip code \_\_\_\_\_

Telephone number of counselor \_\_\_\_\_

Signature of counselor \_\_\_\_\_ Date \_\_\_\_\_

Checked and recorded: \_\_\_\_\_

Date \_\_\_\_\_ Initials \_\_\_\_\_

Certificate and badge presented \_\_\_\_\_ Date \_\_\_\_\_

Applicant will turn in this portion to his unit leader for record posting.

**APPLICANT'S RECORD**

Name **YOUR NAME**

has given me his completed application for the **Weather** Merit badge

Completed on \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ by \_\_\_\_\_

Signature of counselor \_\_\_\_\_

Signature of unit leader \_\_\_\_\_

**COUNSELOR'S RECORD**

Applicant \_\_\_\_\_

☐ Troop ☐ Team Unit number \_\_\_\_\_

☐ Crew

Merit badge \_\_\_\_\_

Date completed \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

There are different versions of blue cards. If yours asks for an email, please put: [education@hiller.org](mailto:education@hiller.org)

NOTE TO BOY SCOUT, VARSITY SCOUT, OR VENTURER: Retain this copy for your permanent records.

It is suggested that the counselor keep this record for at least 1 year in case any question is raised later in regard to this award.

At a minimum, all the highlighted sections should be filled out with your info or the included text.

The Merit Badge Counselor that endorses the card may be different from MBC who facilitated the program and did the initial requirement sign off. For this reason, please do not write in the Counselor name on the card.



# Weather Merit Badge

## Homework



Scout Name: \_\_\_\_\_

Troop #: \_\_\_\_\_

Email: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Date Attended Weather MB Program: \_\_\_\_\_

Upon completion of both requirements 2 and 9A, please return these 3 things: **(1)** completed homework sheet, **(2)** your partially endorsed blue card, and **(3)** a self-addressed stamped envelope to:

Hiller Aviation Museum  
ATTN: Merit Badge Homework  
601 Skyway Road  
San Carlos, CA 94070

Please allow up to 3 weeks turnaround time for your returned blue card to be returned.  
No walk-ins accepted—if urgent, please contact us at [education@hiller.org](mailto:education@hiller.org) to arrange an appointment.

## Requirement 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.*

Dangerous Weather Conditions covered in the program include: Thunderstorms, Tornados, Floods, Hurricane, Winter Storms

My signature confirms that the named Scout discussed the Weather Safety Rules with an adult.

Adult Signature: \_\_\_\_\_

Adult Name Printed: \_\_\_\_\_

Relation to Scout: \_\_\_\_\_

Date: \_\_\_\_\_

# Requirement 9A

Make one of the following instruments: wind vane, anemometer, rain gauge, hygrometer. Keep a daily weather log for one week using information from this instrument as well as from other sources such as local radio and television stations, NOAA Weather Radio All Hazards, and internet sources ( with your parent's permission). Record the following information 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.

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