4-H CLIMATOLOGY PROJECT

WEATHER STATION

UNIVERSITY OF CALIFORNIA

AGRICULTURAL EXTENSION SERVICE

4-H–Ag191

The author is Dewayne E. Gilbert, Extension Bioclimatologist.

Co-operative Extension work in Agriculture and Home Economics, College of Agriculture,
University of California, and United States Department of Agriculture co-operating.
Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914.
George B. Alcorn, Director, California Agricultural Extension Service.

JUNE 1966--2M Rerun

4-H CLIMATOLOGY PROJECT WEATHER STATION

In the 4-H Climatology Project, you will be your own observer, weather authority, construction engineer, and carpenter. Here are three plans to help you build your own equipment, and some guidelines for placing them.

MAKING A RAIN GAUGE

With an accurate rain gauge, you will be an authority on rainfall on your ranch or in your neighborhood.

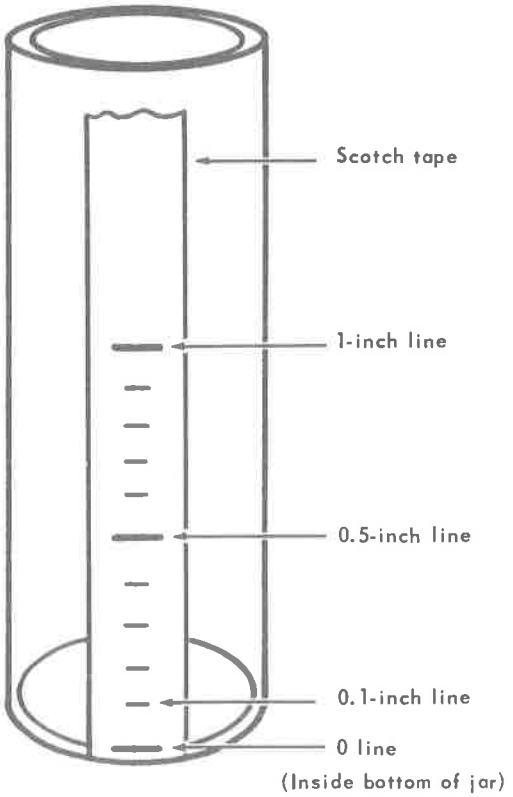
You will need:

1. A straight-sided can. Look for a large juice can, a 2-pound coffee can, or a No. 10 fruit can. Try to find one with a flat bottom.
2. A straight-sided "olive" jar and a straight stick to use as a measuring device.
3. A post or stand for mounting the can 3 feet off the ground.

Follow these steps in building your rain gauge.

1. Paint the can inside and out to prevent rusting. If you paint it white or silver you will lose less water through evaporation. Be sure to let the paint dry before you put water in the can.
2. Place the painted can on a level spot and put 1 inch of water in it. Use a ruler to measure 1 inch exactly.
3. On one side of the olive jar, put a strip of Scotch tape from top to bottom. Use the kind of tape that you can mark with a pencil. The olive jar measuring device will be easier to read and more accurate than measuring the water in the can with a ruler. On the tape, put a pencil mark corresponding to the inside bottom of the jar.
4. Pour the water from the can into the jar, and put a pencil mark on the tape at the water level. Now divide the distance between the two pencil marks into $\frac{1}{10}$-inch divisions. Rainfall always is recorded in tenths of an inch.

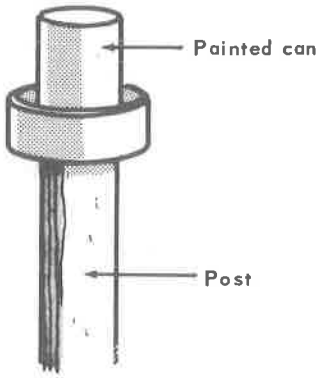
   You may wish to paint the marks on the outside of the jar, so they will stay even if the jar gets wet. If you do paint them, make the lines very narrow, so your measurements will be accurate.



Rain Gauge

5. Drive a post into the ground in an open area. Or you may use one already driven, such as a fencepost. The top of the post must be at least 3 feet above ground.
6. On top of the post, fasten a rack made of wood, or wire, or use a slightly larger can. This rack will prevent the wind from blowing the can over. Set your painted can inside the rack. The rain gauge must be level—use a carpenter level to check it.

The official 24-hour day begins at 7 p.m. Professional weathermen read the gauge at that time. To read the gauge, pour the water from your can into the olive jar. Hold the jar at eye level to read how much rain has fallen. You can read the nearest 0.1 inch easily. If the water level is between the lines, you can estimate the distance from the nearest line to the water level.



Mounted Rain Gauge

MAKING A WIND VANE

Wind direction is important in forecasting weather. It is also important in determining the direction of the prevailing winds over many days or months. This helps you plan for windbreaks or frost protection, or spraying your crops or animals.

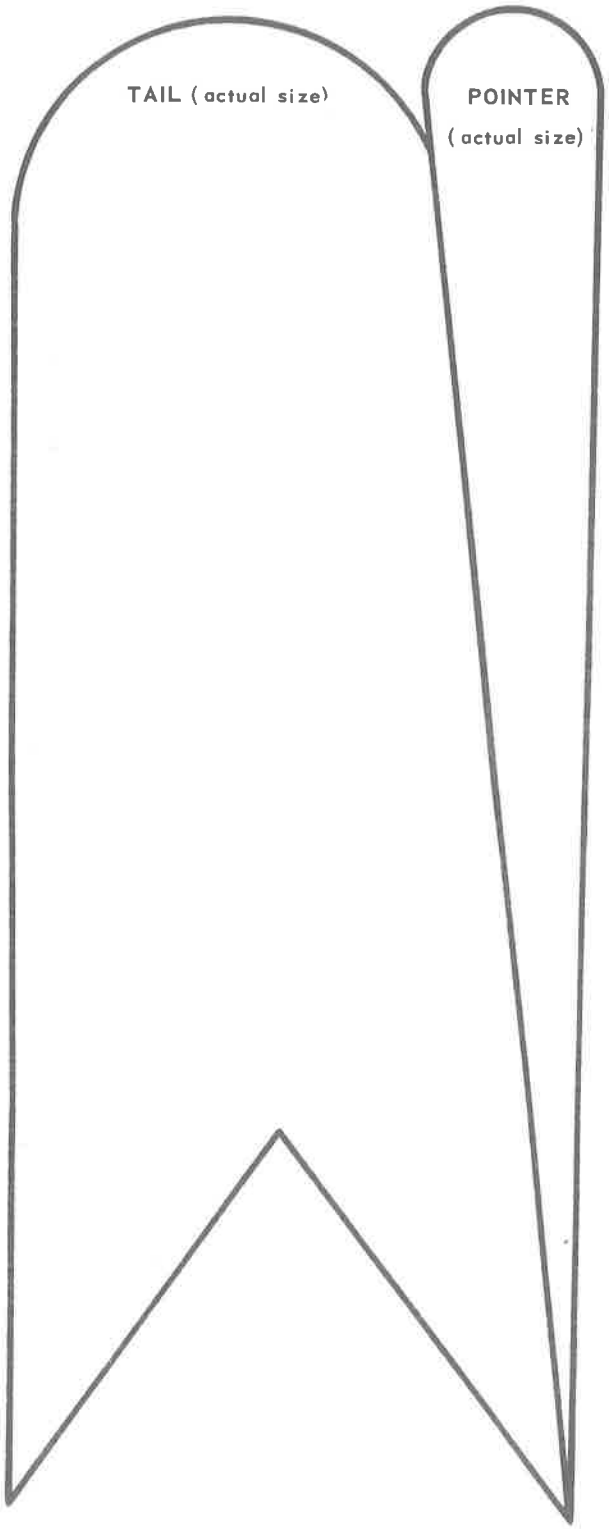
You will need:

1. A wood block about 3 inches square and ¾ inch thick.
2. Three sticks ½ inch wide, ¾ inch thick, and 16 inches long.
3. Two 10-penny nails and some wire brads ¾ inch long.
4. Brass or copper tubing $\frac{3}{16}$ inch in diameter and 3 inches long.
5. Two brass washers with holes big enough for the 10-penny nails to fit loosely.
6. A wood shingle or a piece of $\frac{1}{16}$-inch balsa wood 4 inches wide and 8 inches long.

To make the wind vane, follow these steps.

1. Find the center of your wood block and drive a 10-penny nail through it. Turn the block over so the nail is pointing up.
2. Make a cross of two of your 16-inch sticks. Use your school protractor to make sure the sticks are 90 degrees to each other. In the center, where the sticks cross, drill a hole big enough for the 10-penny nail. Slip this hole over the point of the 10-penny nail in the block. Nail the cross to the block with brads.
3. From the shingle or balsa wood, saw or carve a tail and a pointer. Make them the exact size and shape as the pattern on page 3. Cut a slot in each end of the remaining long stick and fit the tail and pointer into them. (If you use a shingle, put the thin end of the shingle into the slot). Fasten them securely with brads.

4. To find the balance point of the arrow, place the shaft on the edge of a square. Mark the balance point with a pencil. Drill a hole, just a little smaller than a 10-penny nail, at the balance point in the the center of the stick. Drive the other 10-penny nail through the hole.
5. Put a washer over each nail. Place the brass or copper tube over the nail in the cross. Insert the nail on the arrow into the brass tube.
6. Varnish or paint all wood parts.
7. Mount your wind vane on a post or stand, 4 feet above the ground. Make sure the top of the post is level. Use a compass to line up the cross so that one of the sticks points north. Paint the end of that stick a different color. The cross now points to all four major compass directions, and will help you determine the "in-between" directions.



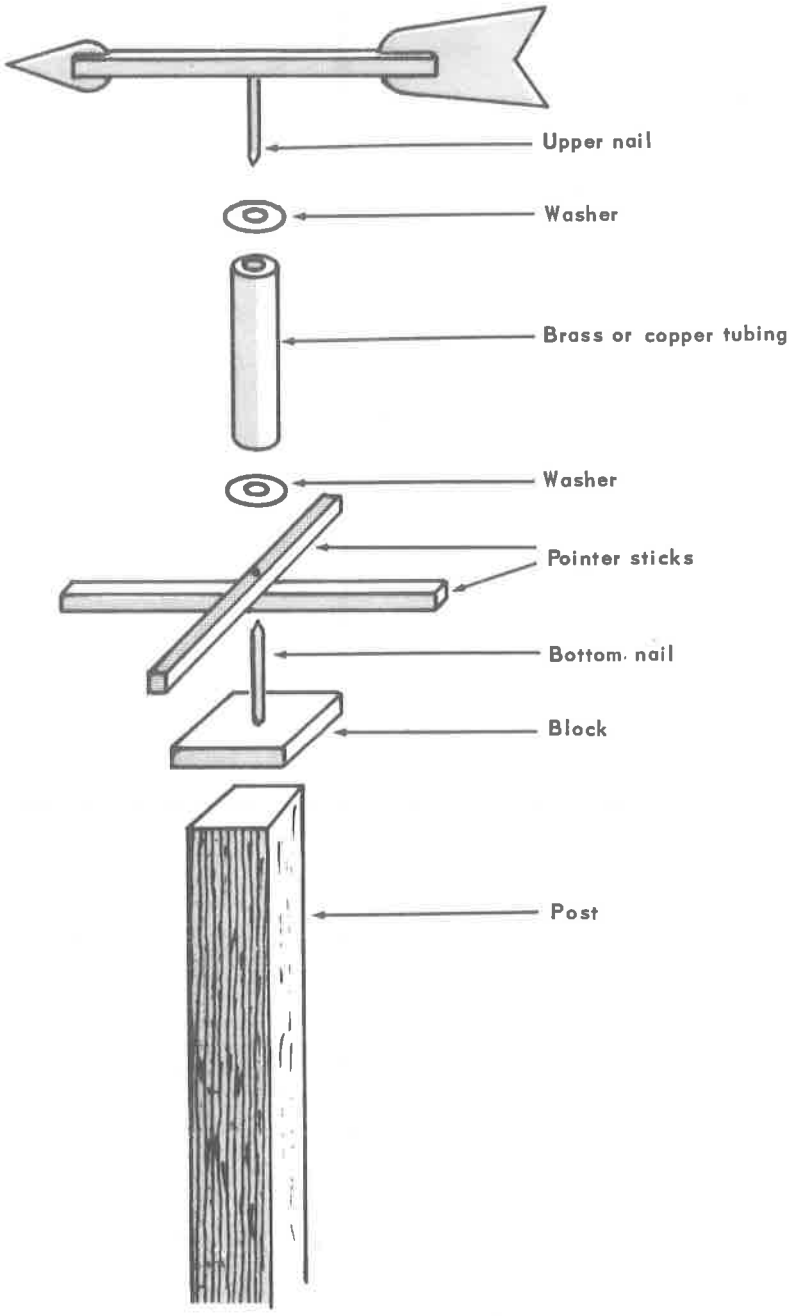
Roller Bearing for Wind Vane

You may wish to build your wind vane, using a roller-skate wheel as a bearing.

You will need:

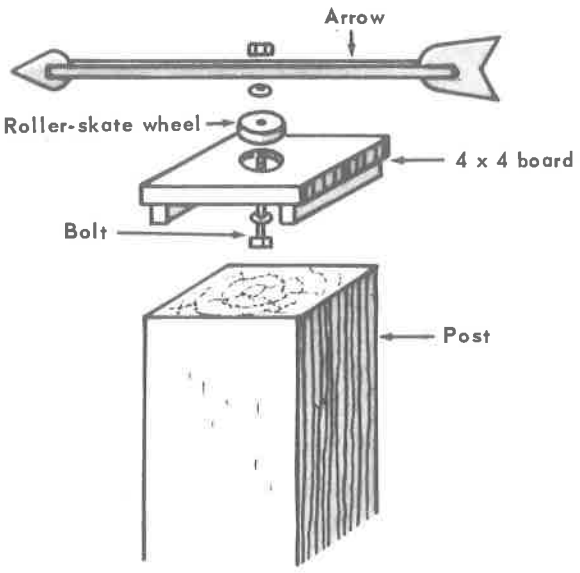
1. A board 1 by 4 by 4 inches.
2. Two boards 1 by 1 by 4 inches.
3. One 2-inch bolt, small enough in diameter to fit the hole in the roller-skate wheel.
4. One roller-skate wheel.
5. One nut to fit bolt.
6. Two washers to fit bolt.
7. Nails to fasten assembled vane to post.

Exploded View of Wind Vane Assembly



Make the arrow as described before, but drill the hole at the balance point large enough to fit the bolt.

- In the large board, cut a round hole just a little smaller than the roller-skate wheel. Use a vise to press the wheel into the hole.
- Put the bolt through the hole in the roller-skate wheel.
- Place one washer over the bolt, put the bolt through the wheel, then put the other washer over the bolt.
- Place the arrow over the bolt and fasten it tightly with the nut.
- Nail the two small boards to the underside of the large board, on opposite sides.
- Mount the vane on the top of a level post by driving nails through the vane base and the two small boards into the post.
- After the vane is mounted, paint lines on the 4 x 4 board to point to north, south, east, and west. These lines will help you to determine the "in-between" directions.



Roller-Skate Wheel Bearing Wind Vane.

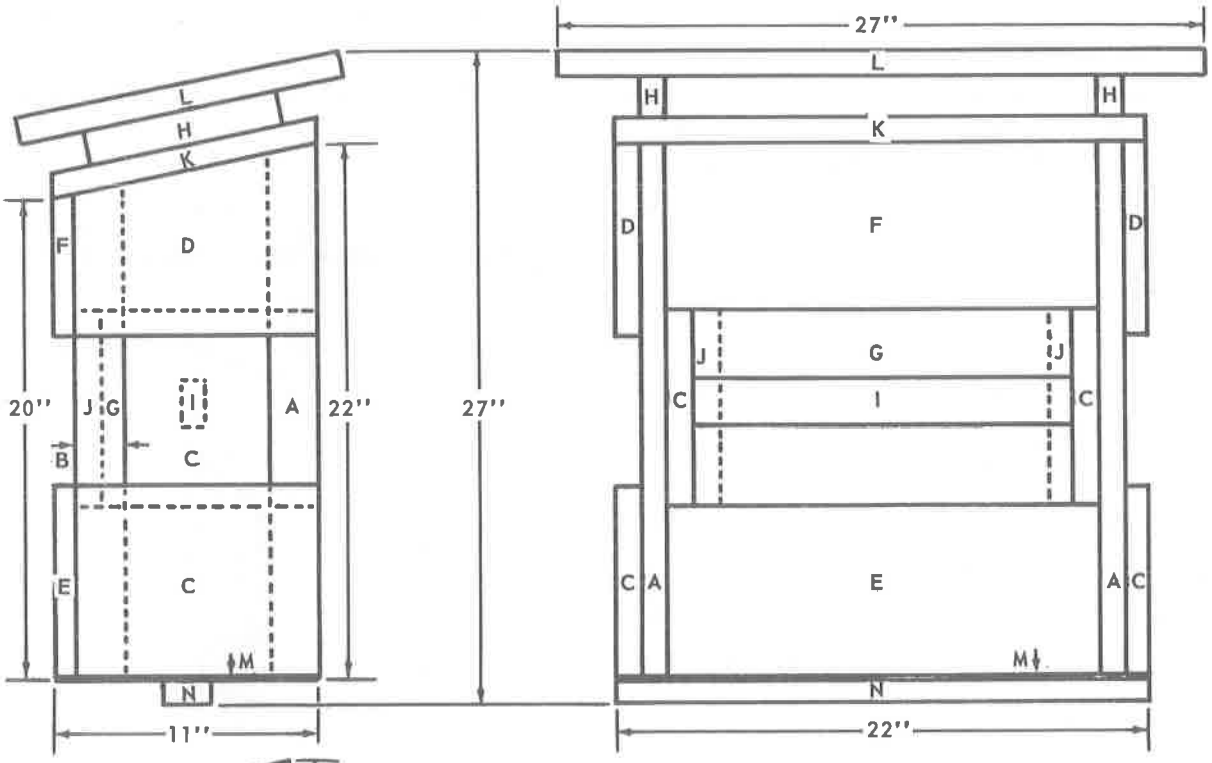
CONSTRUCTING A WEATHER SHELTER

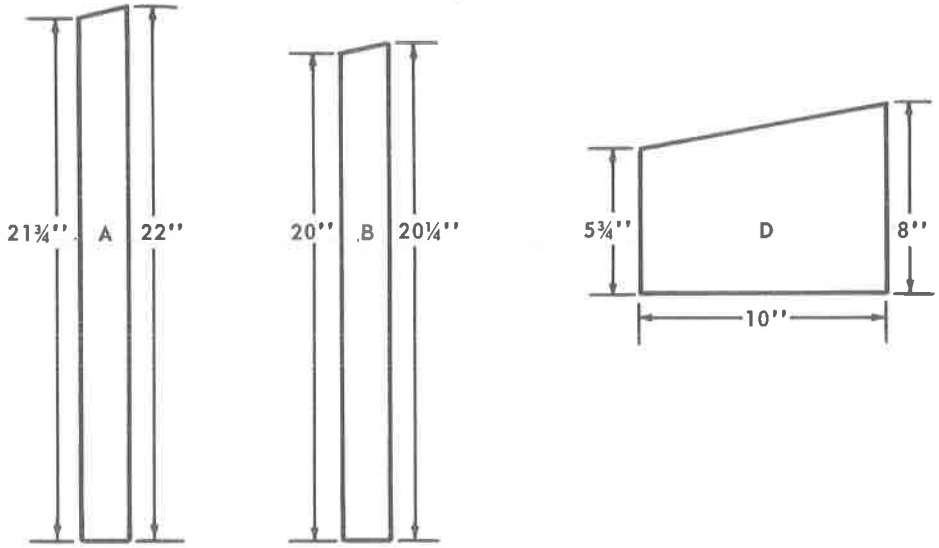
The weather shelter is the most important structure of your weather station. In it you will house your maximum-minimum registering thermometer. The sketches on pages 6 and 7 show the parts and construction details for the shelter.

Paint the shelter white. Don't forget the top and the inside. Here are some special details for installing your shelter.

1. The bottom of the shelter should be 4 feet above the ground. Select a solid post and nail your shelter to it, either through the bottom crosspiece or through the back. You may want to add some additional braces to keep the wind from blowing the shelter off the post and breaking it or the thermometer.
2. Face the shelter so that the open side is toward the north. This will keep the sun from shining on the thermometer and giving you a false reading.
3. Keep the soil bare under the shelter. Plants of any sort under the shelter will cause the thermometer to read slightly cooler.

Parts for Shelter Construction

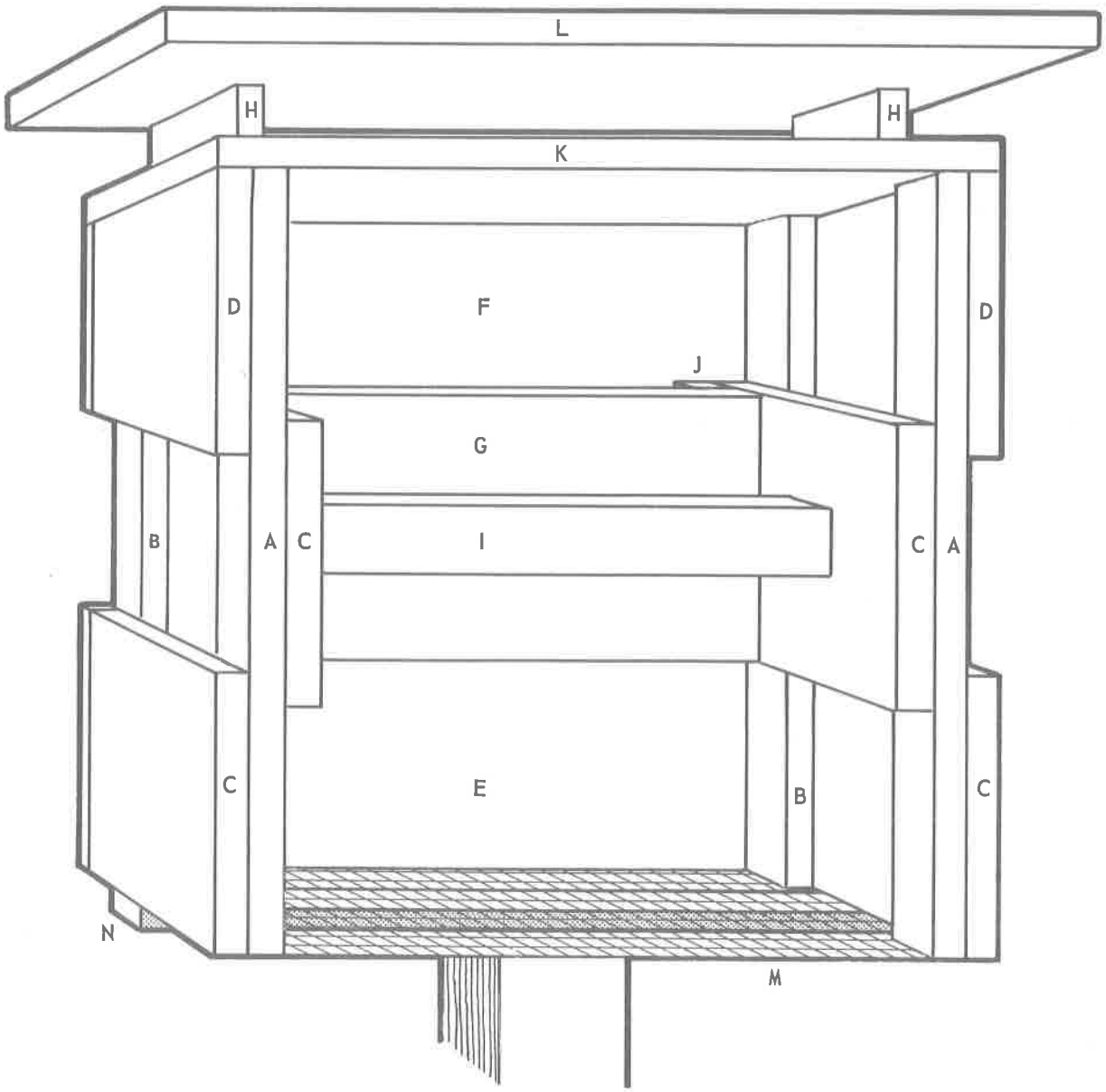




LIST OF MATERIALS

- (A) (2) 1" x 2" x 22" stock
- (B) (2) 1" x 2" x 20¼" stock
- (C) (4) 1" x 8" x 10" stock
- (D) (2) 1" x 8" x 10" stock
- (E) (1) 1" x 8" x 22" stock
- (F) (1) 1" x 8" x 22" stock
- (G) (1) 1" x 8" x 18" stock
- (H) (2) 1" x 2" x 8" stock
- (I) (1) 1" x 2" x 18" stock
- (J) (1) 1" x 2" x 8" stock
  Rip into 2 pieces
- (K) (1) 1" x 12" x 22" stock
- (L) (1) 14" x 27" (1 piece)
- (M) (1) Hardware cloth
  ½" or ¼" mesh, 10" x 22"
- (N) (1) 1" x 4" x 22" stock

Shelter Body



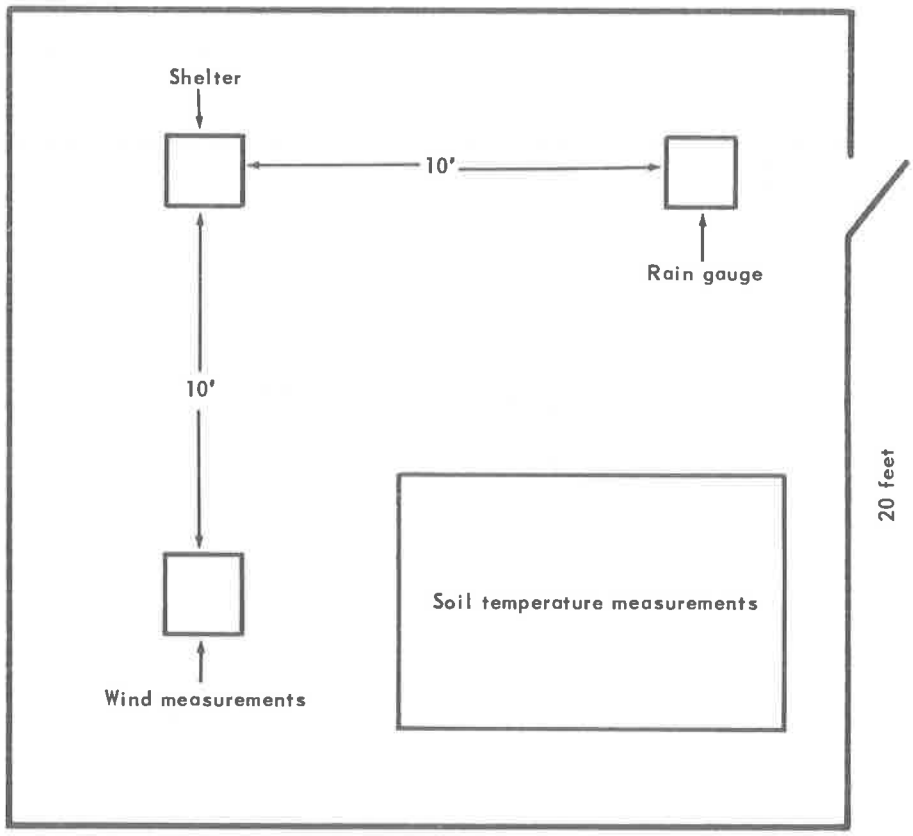
INSTALLING YOUR WEATHER STATION

In your second- or third-year climatology project you will be adding to your collection of instruments. So be sure to select an area large enough to hold the instruments you've just built plus the ones you will build next year. An area 15 to 20 feet square will be large enough.

These are the general rules to follow when selecting your weather station site.

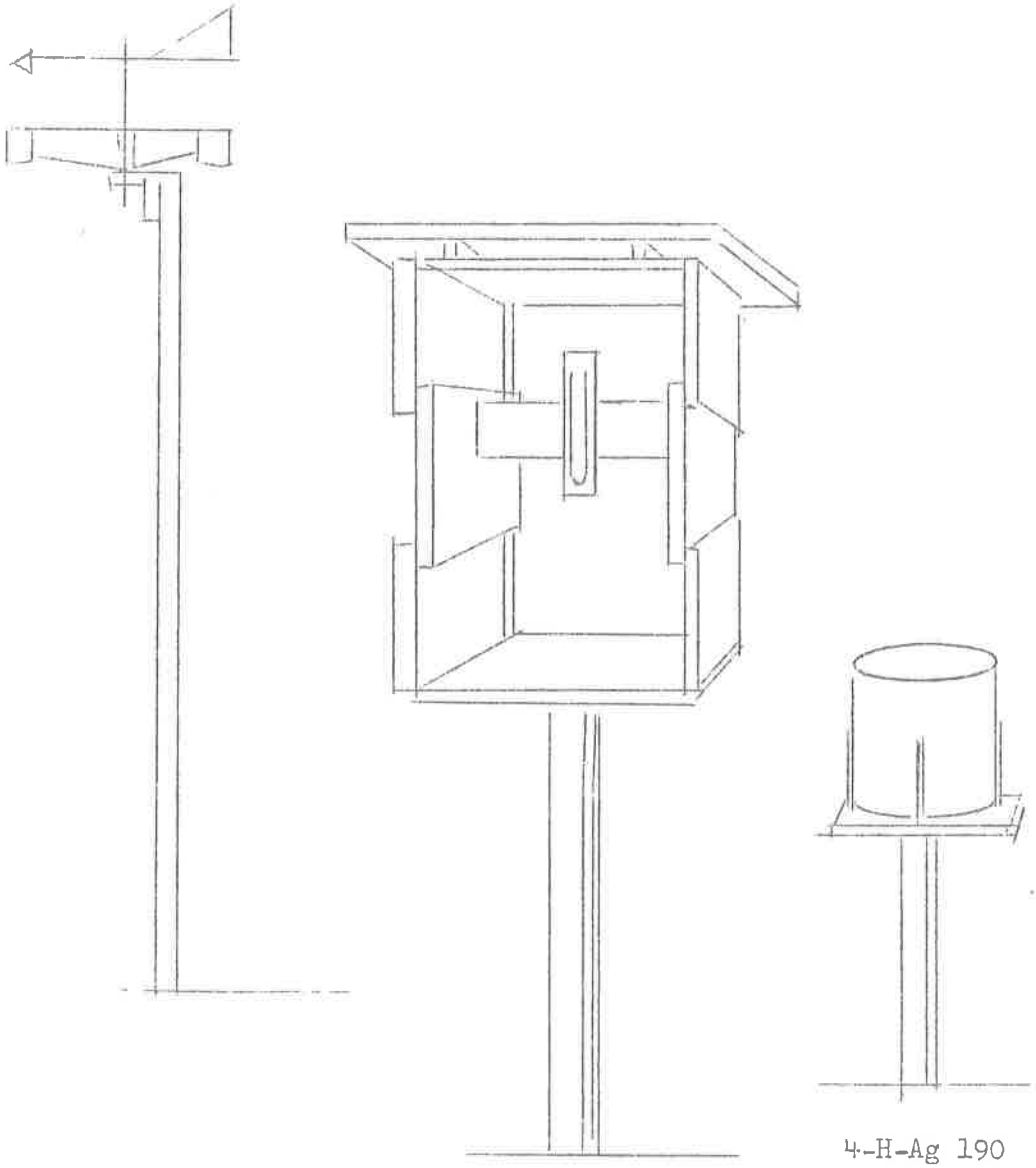
1. The area should be on level soil or near the crest of a slope. Do not put your weather station in a slight depression, because cold air settles, and your thermometer will read the temperature in a cold "pocket."
2. Choose an area some distance from major obstructions such as trees, buildings, and board fences. As a rule, the distance from such objects should be two or three times the height of the object.
3. If possible, fence the area to keep out animals. Put a gate in the fence so you and visitors can enter the area easily.
4. Remove all plants from the ground surface. Leave the soil bare.
5. Keep the grass trimmed neatly outside your weather station fence.

Here is a typical layout of a 4-H climatology station.



4-H Climatology Station

4-H CLIMATOLOGY PROJECT OUTLINE



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In this project you will measure some of the elements of climate and relate these to plant and animal growth and development. Climate is defined as daily weather over time. The time can be a week, a month, a year or several years. The elements which determine climate are temperature, wind, humidity, rainfall, sunlight, and barometric pressure.

In the Climatology project you will have an opportunity to:

+ develop an understanding of daily weather as it makes up climate
+ learn to measure temperature, wind, rainfall, and humidity
+ learn how each of the elements of climate influence plants and animals
+ learn how each of the elements of climate influence each other
+ learn how we can modify the climate
+ become aware of the need for learning more about climate influence
+ develop skills in interpreting climate data and managing plants and animals to use climate to an advantage

General

You will study the elements which make up climate. You will want to measure temperature, wind, humidity, rainfall, and barometric pressure. You will want to compare your findings to the nearest Weather Bureau installation. As you begin to collect data you will note that plants and animals behave differently as the climate changes from week to week, season to season, or year to year.

Beginning Project

Make: A weather shelter, wind vane, rain gauge.

Purchase: A maximum-minimum thermometer at your local hardware store.

Do: Keep a record book with these inserts.

- daily maximum temperature
- daily minimum temperature
- daily mean temperature
- monthly mean maximum temperature
- monthly mean minimum temperature
- daily wind direction
- rainfall total each day

Prepare a demonstration

Write a story of activities and accomplishments.

Prepare an exhibit. (optional)

Record behavior of plants and animals (for plants - planting, flowering and harvest dates; for animals - breeding date, growth rates, feed consumption rates). (optional)

Intermediate Project

Make: An anemometer and calibrate it.

Obtain: Ordinary thermometer and soil thermometer.

Do: Keep a record book with these inserts.

- daily maximum temperature
- daily minimum temperature
- daily mean temperature
- weekly mean max, weekly mean min and weekly mean temperature
- monthly mean max, mean min and mean temperature
- daily soil temperature at 7-8:00 a.m.; 12-1:00 p.m.; 5-6:00 p.m.
- daily wind direction
- wind speed at certain periods of the day
- relative humidity at 7-8:00 a.m.; 12-1:00 p.m.; and 5-6:00 p.m.

Relate your temperature measurements to one or more nearby weather bureau stations.

Determine soil temperature variations with and without irrigation.

Prepare a demonstration.

Write a story of activities and accomplishments.

Record behavior of plants and animals.

Plant a crop at several periods during the year. Record when it is planted, blooming date, maturity date, number of days from planting to harvest. (Relate this to soil temperature and air temperature).

Compare growth rates of different classes of livestock. If you don't have scales, use heart girth measurements.

Prepare an exhibit. (optional)

Advanced Project

Make: Recording anemometer,

Recording hygrometer,

Barometer.

Obtain: Ordinary thermometer.

Do: Keep a record book with the following inserts.

(See beginning and intermediate project list), plus

barometric pressure at 7-8:00 a.m.; 12-1:00 p.m.;

5-6:00 p.m.

Measure the temperature on all sides of the house or barn on cloudy and sunny days.

Measure the temperature on the windward and sheltered side of a windbreak on windy and still, cloudy and sunny days.

Measure the temperature in the center of rooms on the east and west side of a house; also the north and south rooms.

Measure the temperature under a livestock shade and in the open on clear and cloudy days.

Measure the temperature of the feed and water in the sun and in shade for several consecutive days. Are the animals feeding habits the same?

Measure the daily growth rate of plants in the shade and in the open sun.

During the winter, measure the air temperature in the open and under a tree.

Compare winter temperatures in the open and behind a windbreak; also, in an orchard and outside the orchard.

Determine a formula to use which will permit you to predict, with accuracy, what the temperatures and humidities are at your station based upon one or more weather bureau stations.

Record changes in barometric pressure. How does this indicate storm relationships?

Learn to read and interpret a weather map as it indicates the future cultural operations on the ranch.

Learn to identify cloud types and how they indicate future weather changes.

Prepared by Dewayne E. Gilbert, Extension Bioclimatologist for presentation at the State 4-H Leadership Conference, September 1965.

Co-operative Extension work in Agriculture and Home Economics, College of Agriculture, University of California, and United States Department of Agriculture co-operating.

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California 4-H CLUB RECORD

CLIMATOLOGY

Check the unit in which you are enrolled this year:

☐ Beginning Unit ☐ Intermediate Unit ☐ Advanced Unit

Record for Club Year Ending _____

Name _____ Age _____ Year in This Project _____

Year in 4-H Club Work _____ Name of 4-H Club _____

Altitude of Your Climatology Station _____ Climate Zone _____

Tell about the place on which your weather station is located.
(Examples: north side of hill; in clearing in canyon; on flat land; etc.)

_____

_____

_____

I DID THE FOLLOWING: (Check items as they are completed.)

- ☐ Made and installed a weather station.
- ☐ Installed a rain gage.
- ☐ Made and installed a weather vane.
- ☐ Had my leader inspect my climatology station.

I LEARNED TO: (Check the items you have learned.)

- ☐ read a maximum-minimum thermometer.
- ☐ read a compass.
- ☐ read a rain gage.
- ☐ keep daily climate records.
- ☐ keep monthly graphs for temperature, rainfall, and wind direction.
- ☐ compute mean temperature.
- ☐ compute monthly averages for maximum, minimum, and mean temperatures.
- ☐ compute average monthly rainfall.

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
1								
2								
3								
4								
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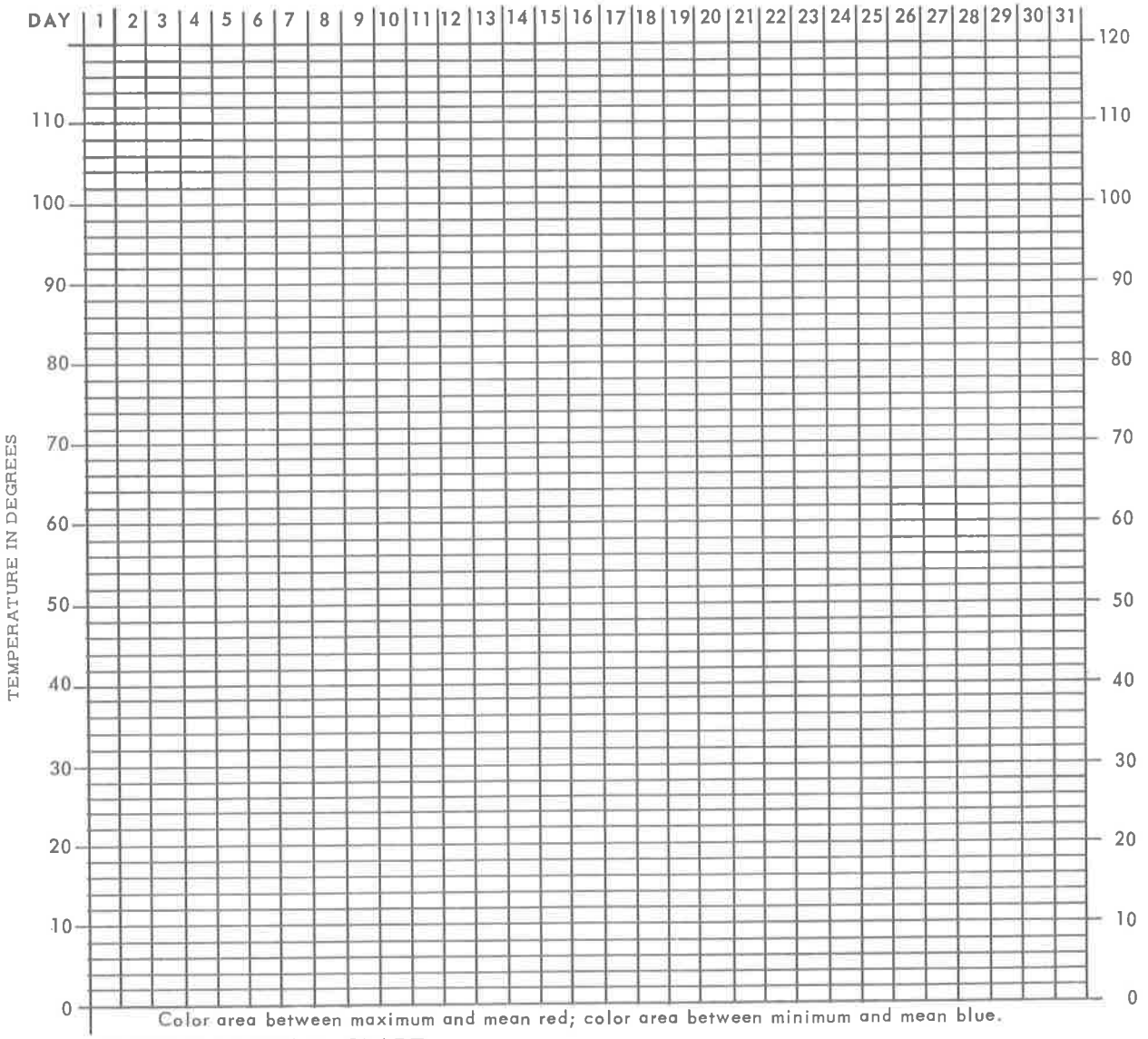
28								
29								
30								
31								
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

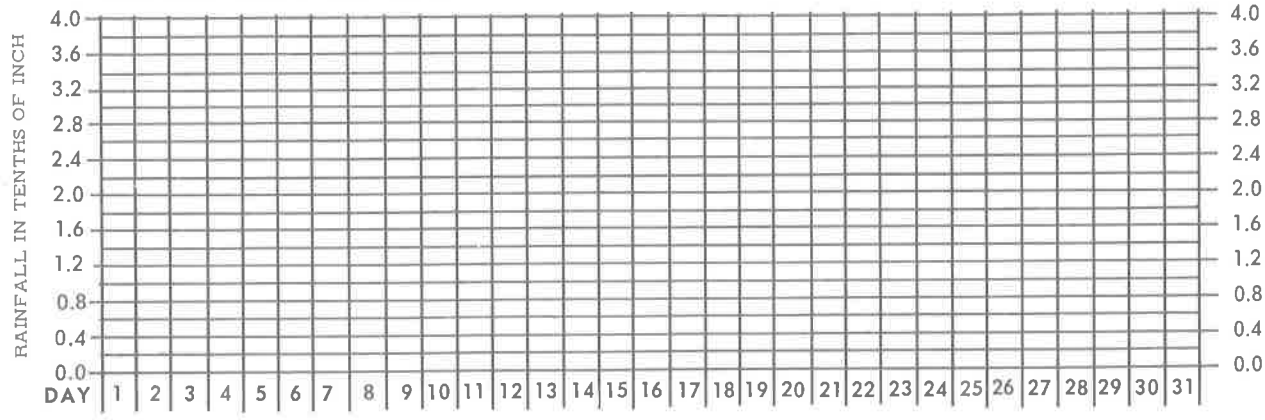
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
2	a.m.								
	p.m.								
3	a.m.								
	p.m.								
4	a.m.								
	p.m.								
5	a.m.								
	p.m.								
6	a.m.								
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29	a.m.								
	p.m.								
30	a.m.								
	p.m.								
31	a.m.								
	p.m.								
Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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29								
30								
31								
Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

_____

Vegetables: _____

_____

_____

Trees: _____

_____

_____

Insects: _____

_____

_____

Birds and animals: _____

_____

_____

People: _____

_____

_____

Other: _____

_____

_____

MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
1								
2								
3								
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6								
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9								
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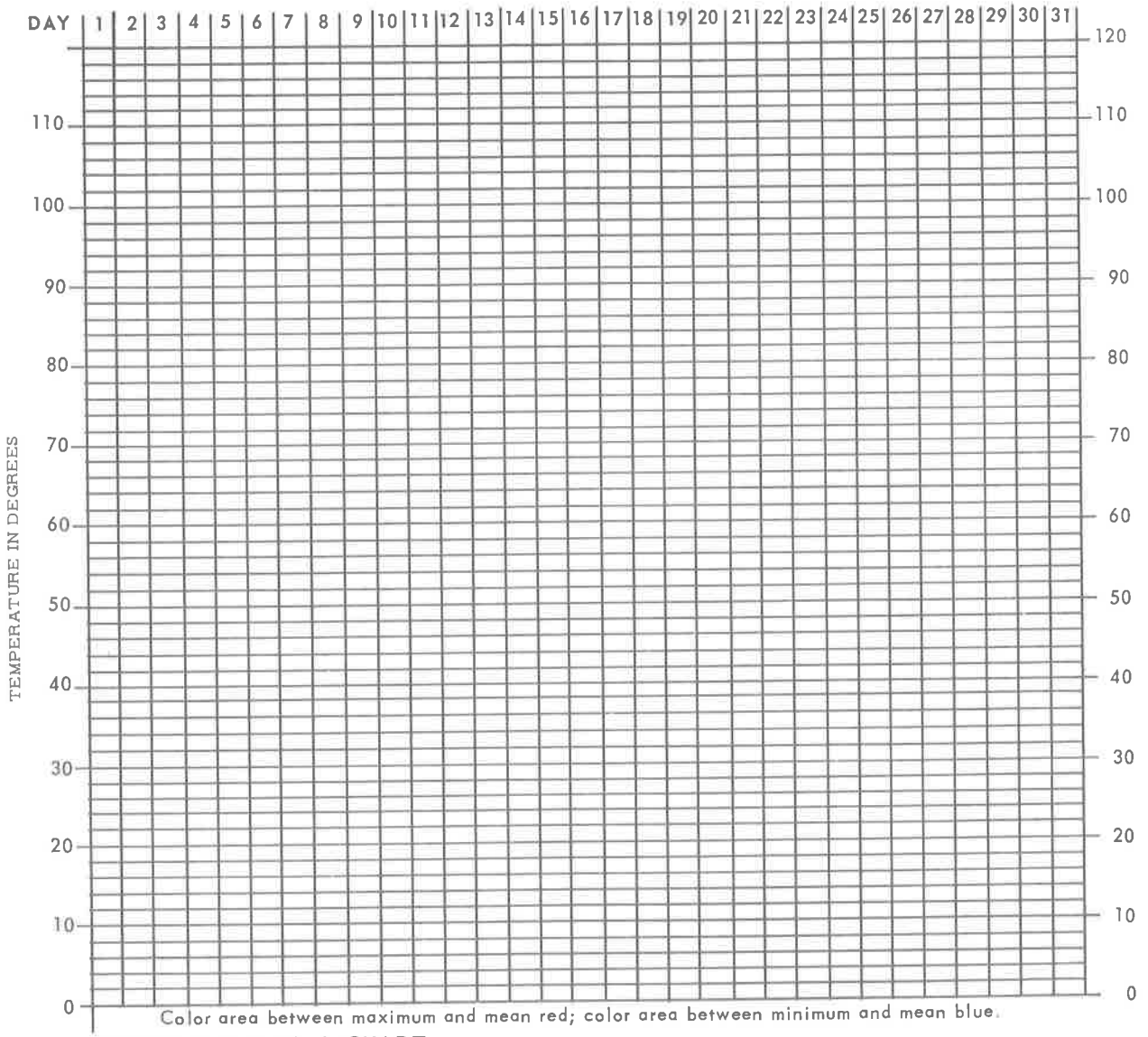
31								
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

MONTHLY TEMPERATURE CHART

Month _____ Year _____



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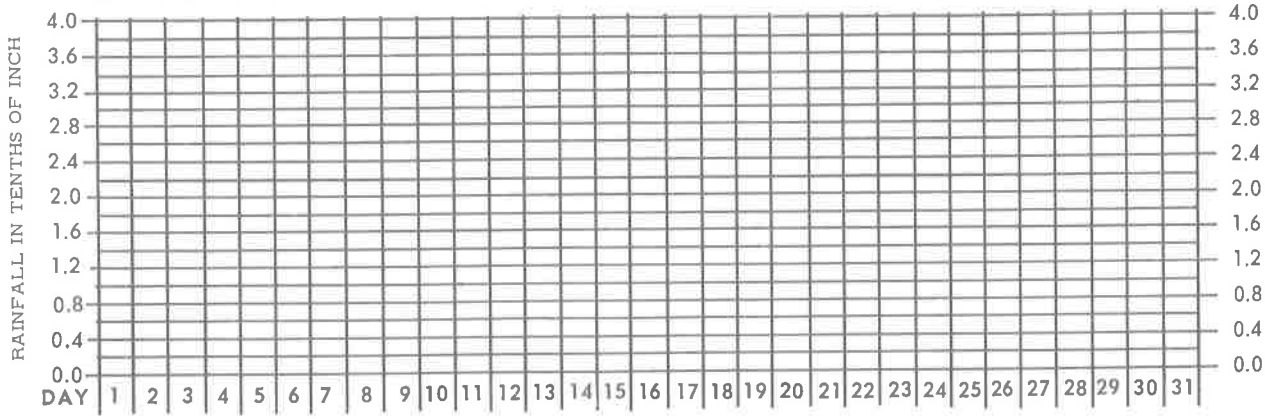
MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
2	a.m.								
	p.m.								
3	a.m.								
	p.m.								
4	a.m.								
	p.m.								
5	a.m.								
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	p.m.								
30	a.m.								
	p.m.								
31	a.m.								
	p.m.								
Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
1								
2								
3								
4								
5								
6								
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

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Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____

Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
1								
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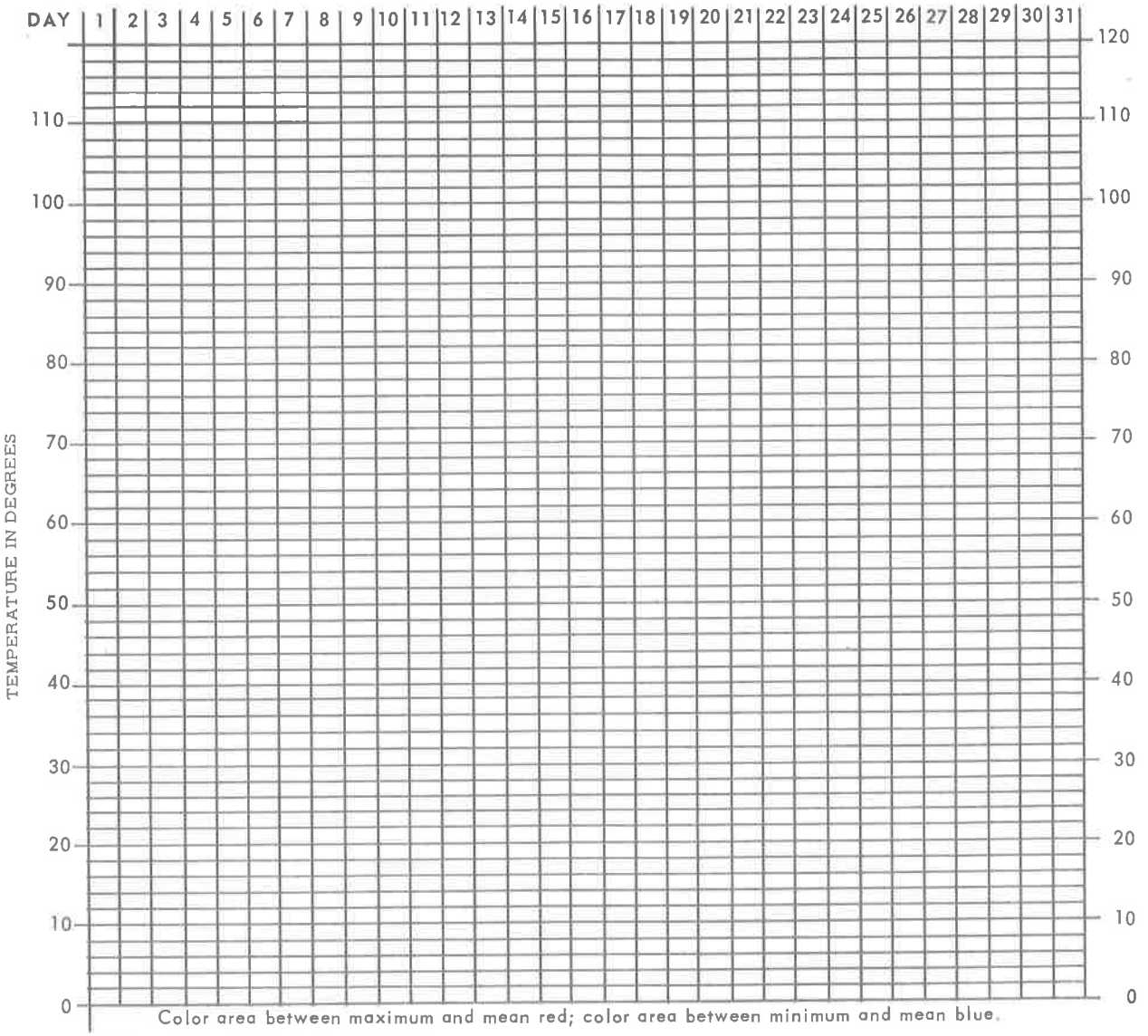
31								
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

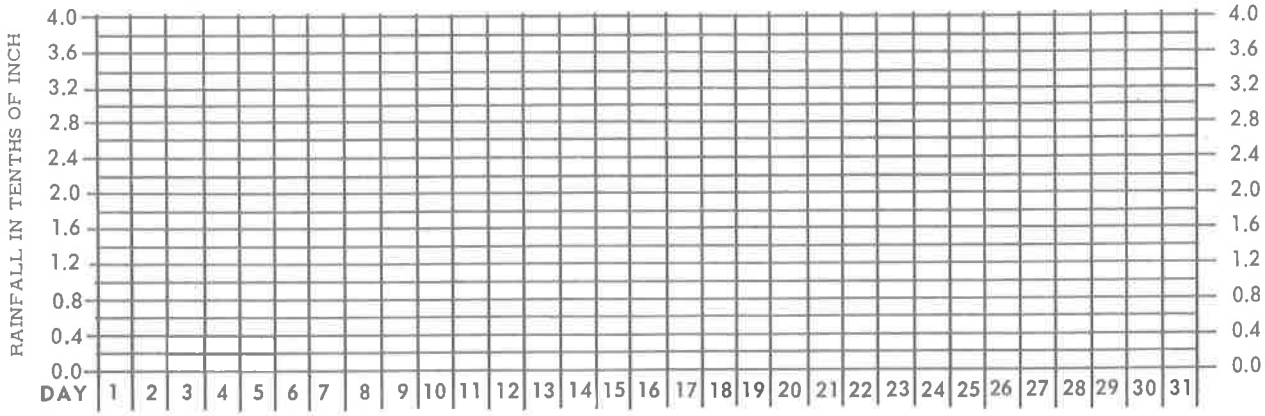
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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	p.m.								
3	a.m.								
	p.m.								
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	p.m.								
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31	a.m.								
	p.m.								
Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

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Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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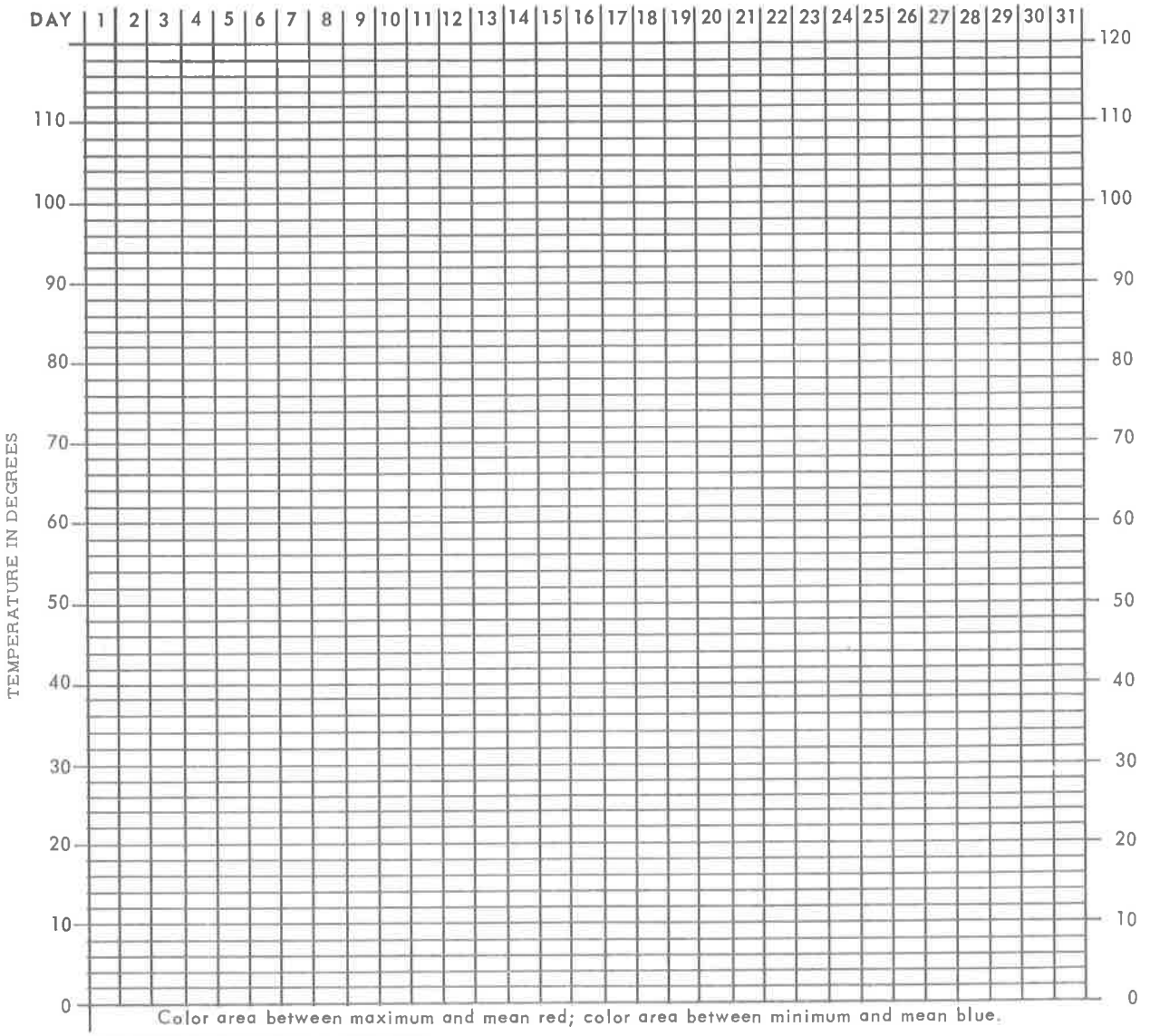
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

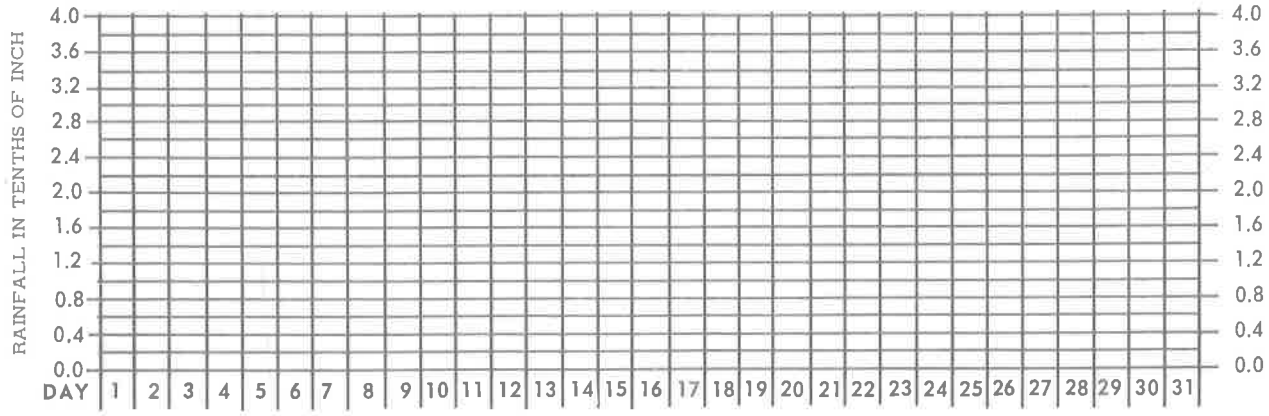
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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	p.m.								
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	p.m.								
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31	a.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

Month _____ Year _____

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

Vegetables: _____

Trees: _____

Insects: _____

Birds and animals: _____

People: _____

Other: _____

MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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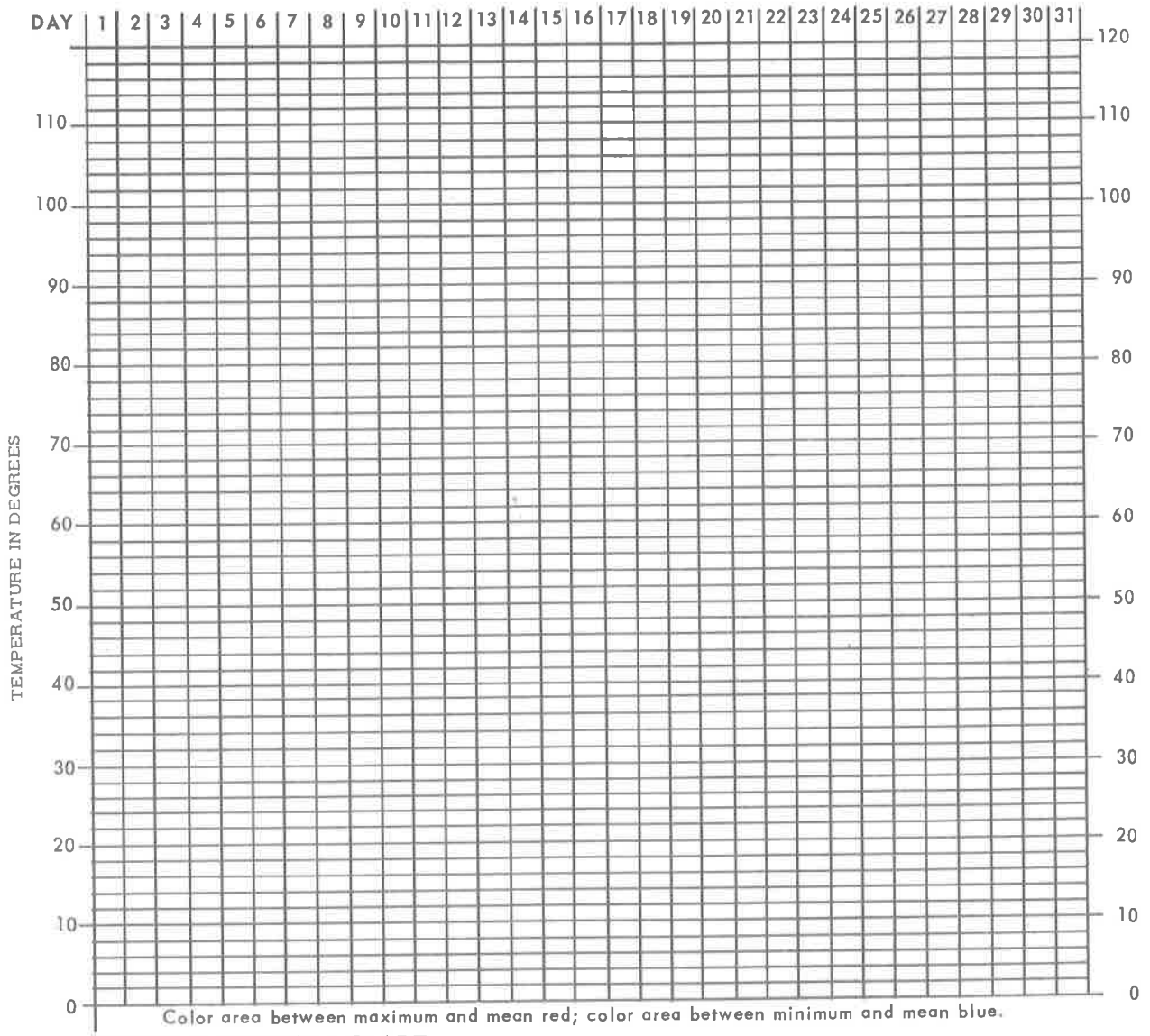
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

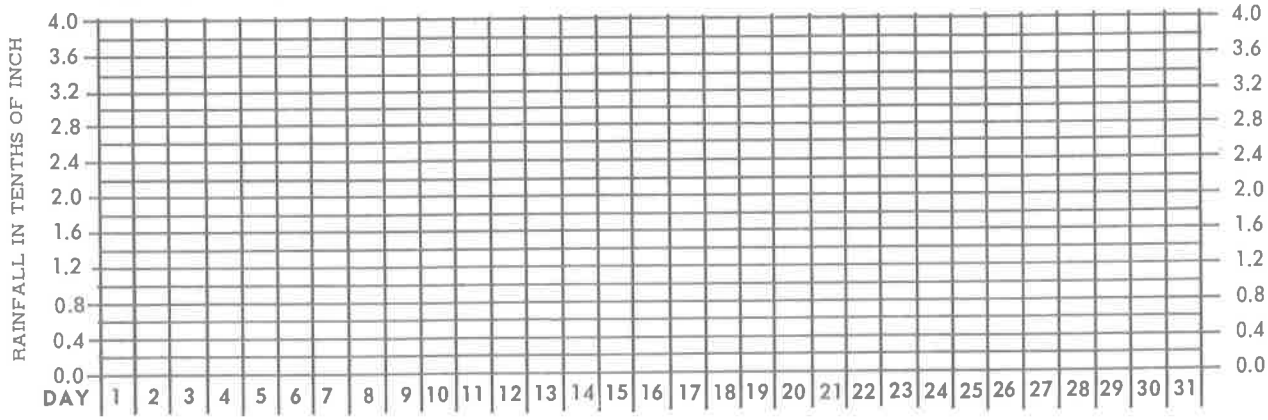
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

_____

Vegetables: _____

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_____

Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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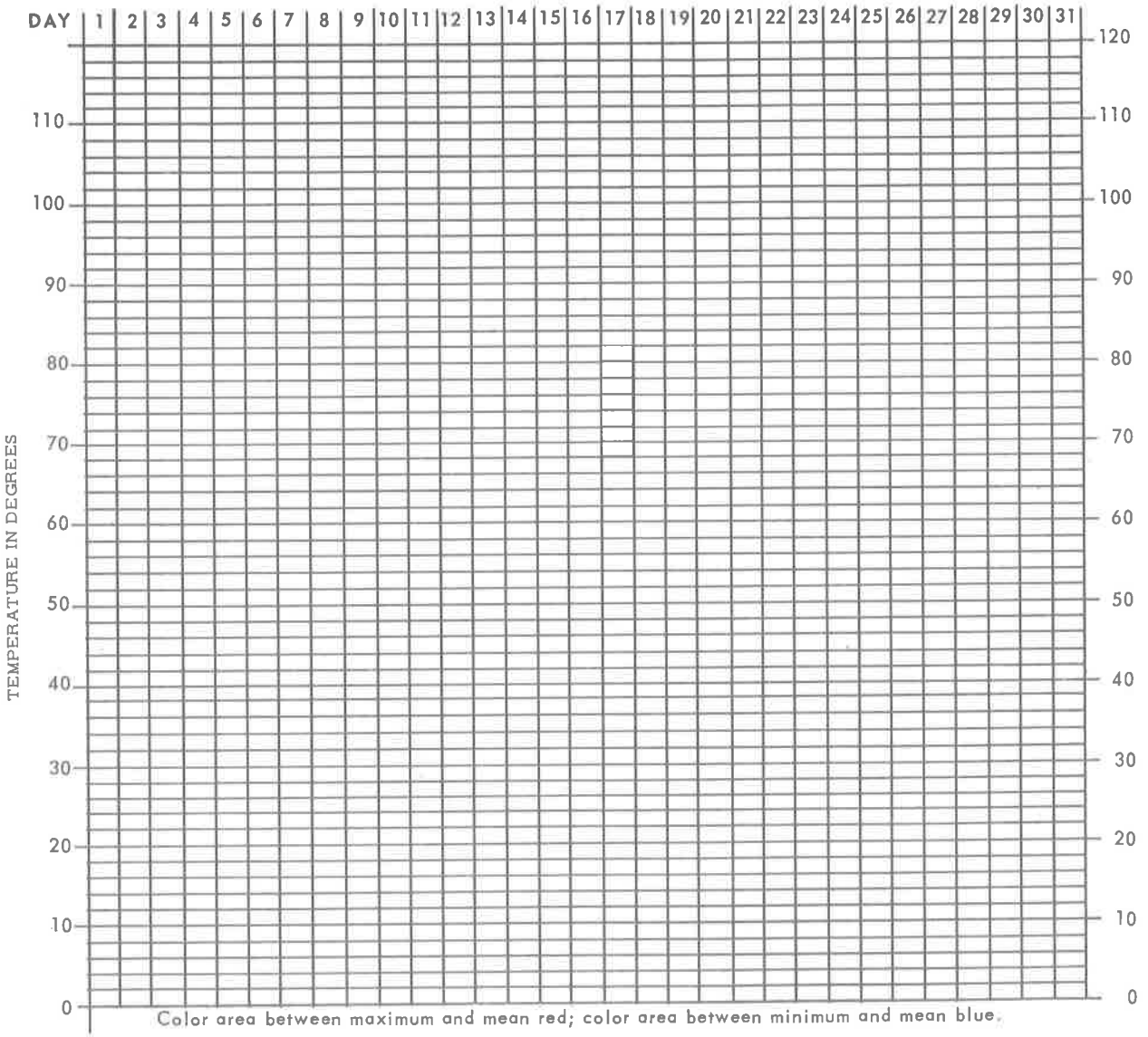
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

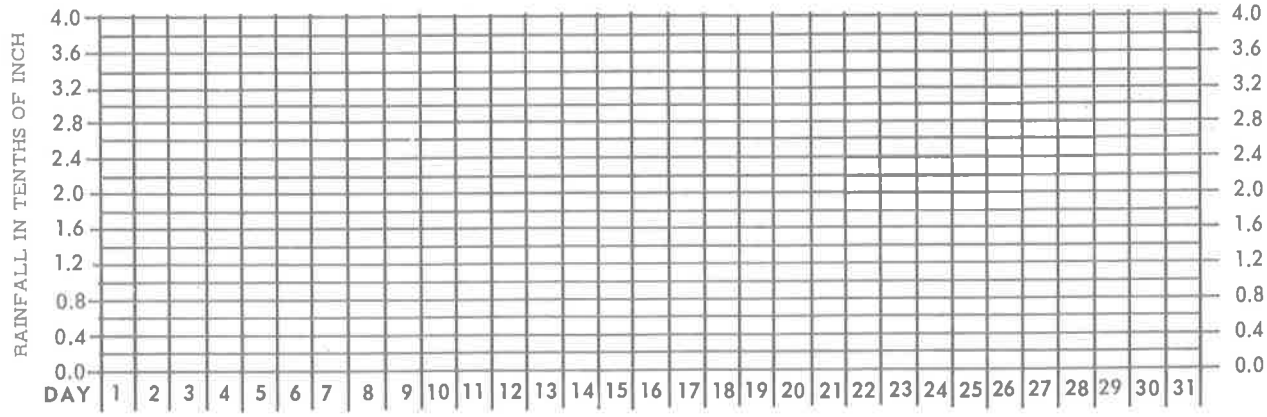
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
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Wind Predominance									

(Total X's in each column)

_____ Month _____ Year

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

_____

Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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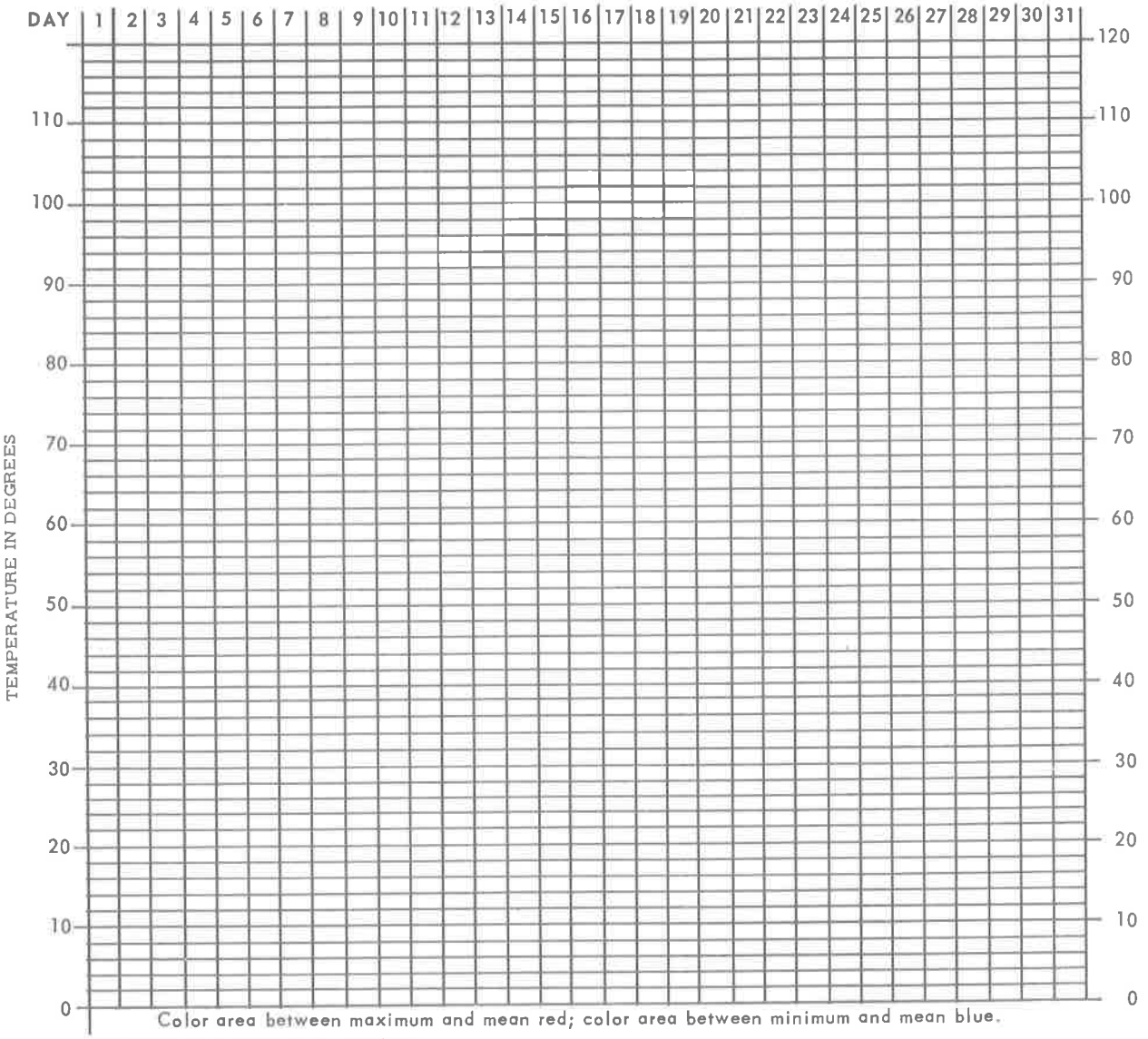
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

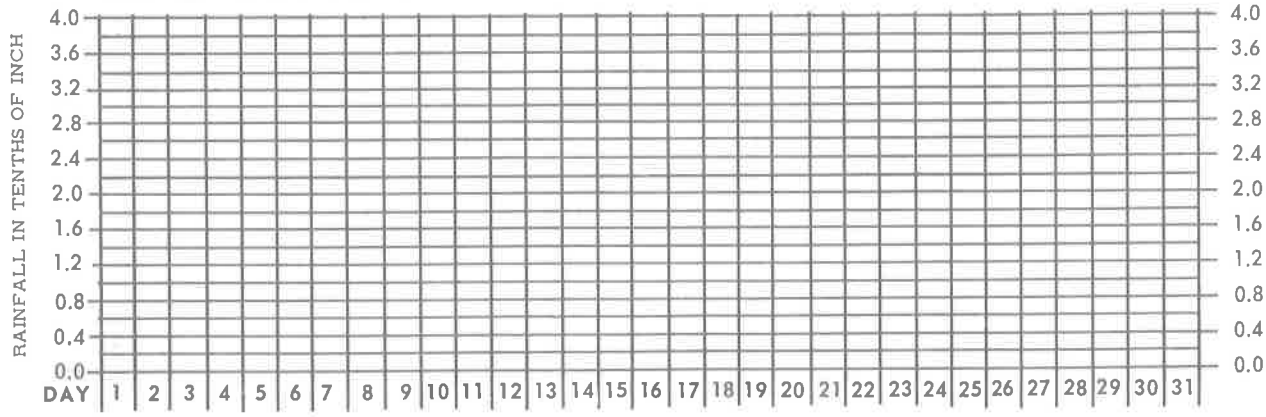
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

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Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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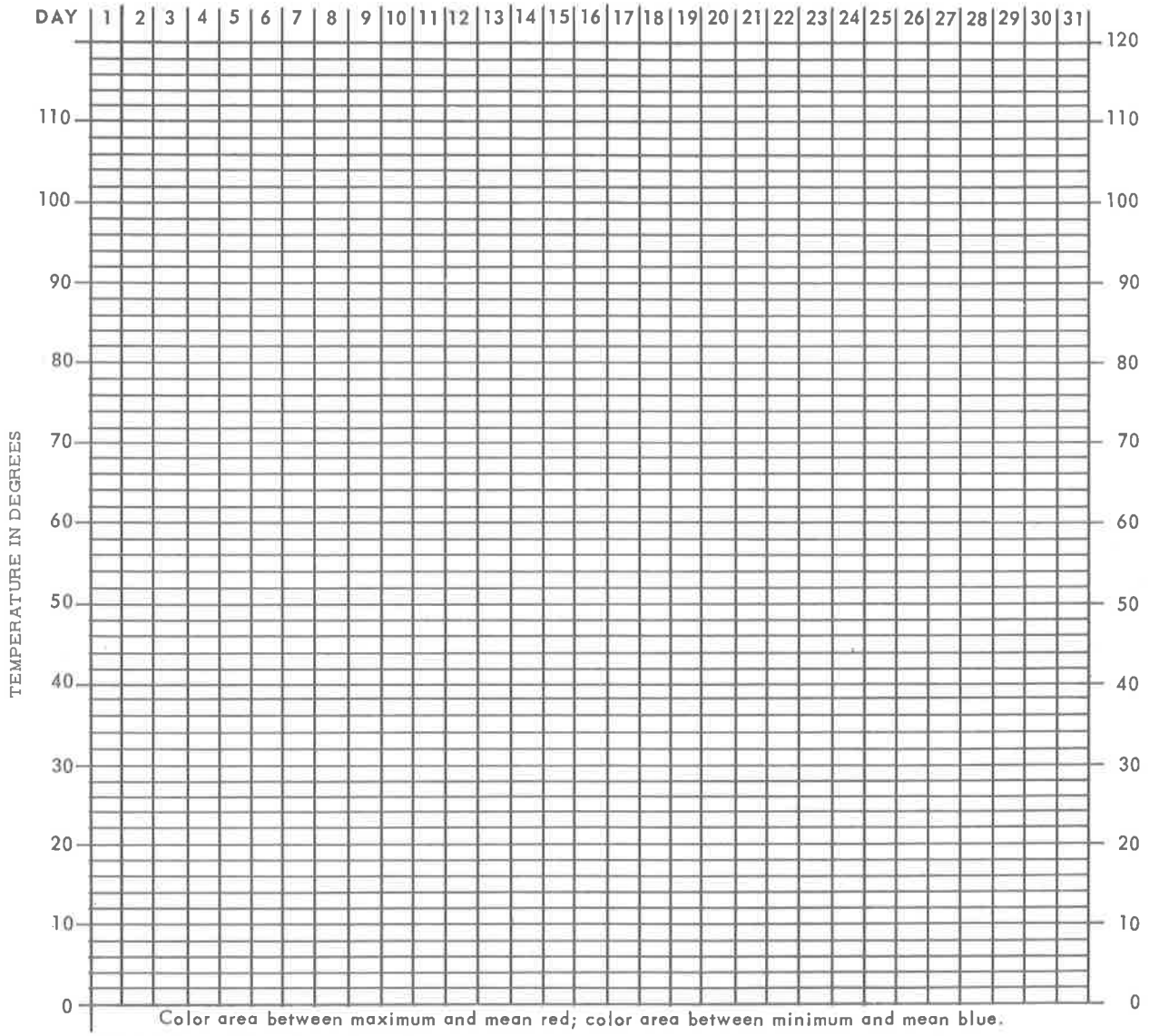
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

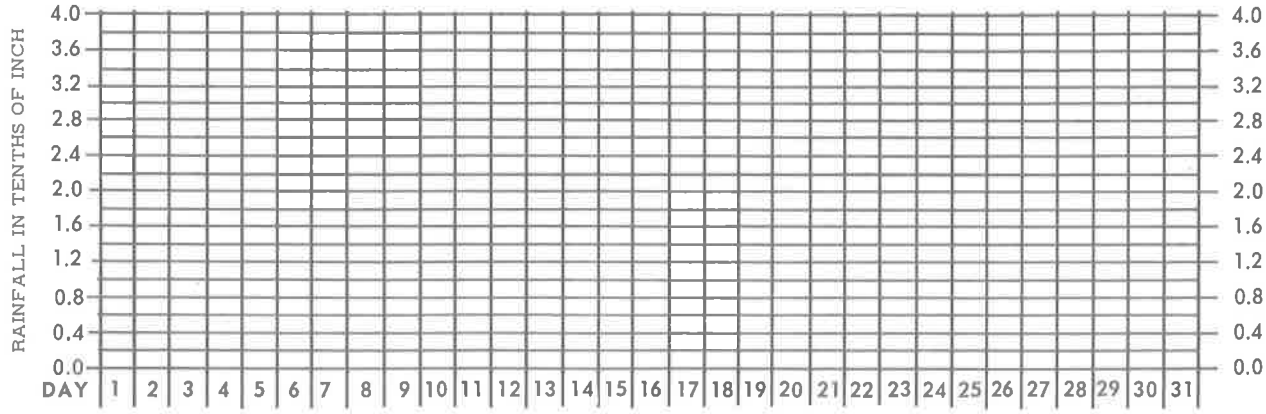
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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	p.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ Month _____ Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

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Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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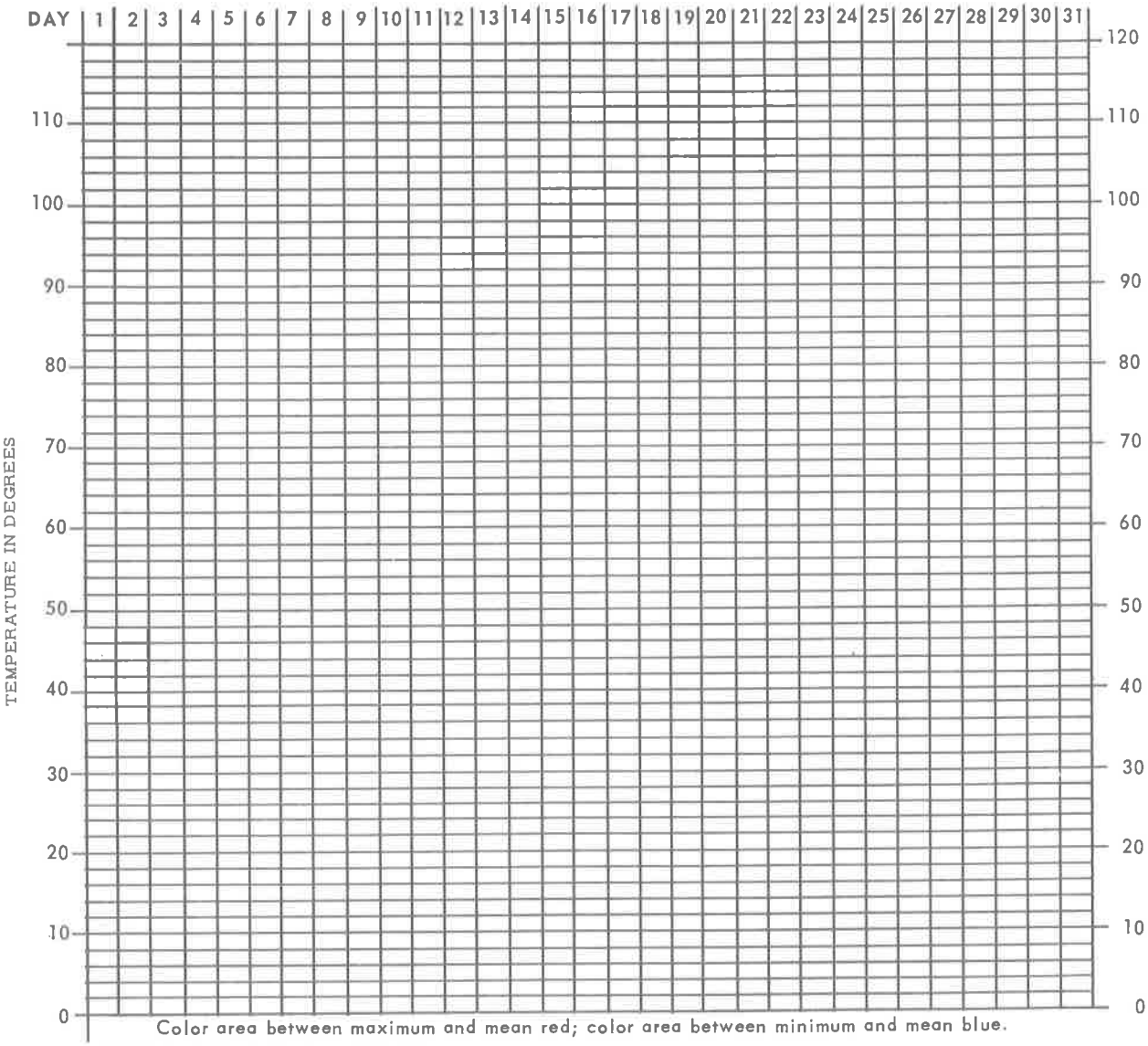
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

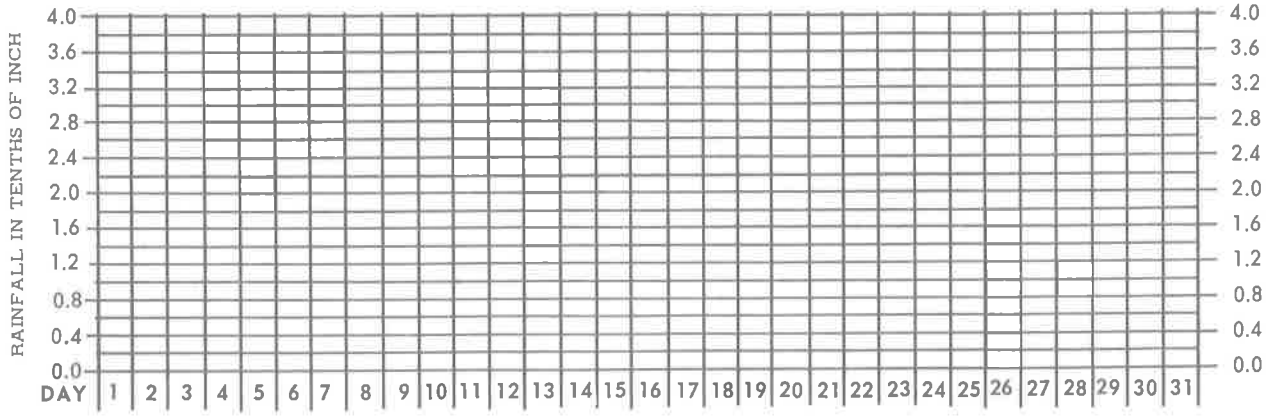
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
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3	a.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

Month _____ Year _____

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

Vegetables: _____

Trees: _____

Insects: _____

Birds and animals: _____

People: _____

Other: _____

MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
1								
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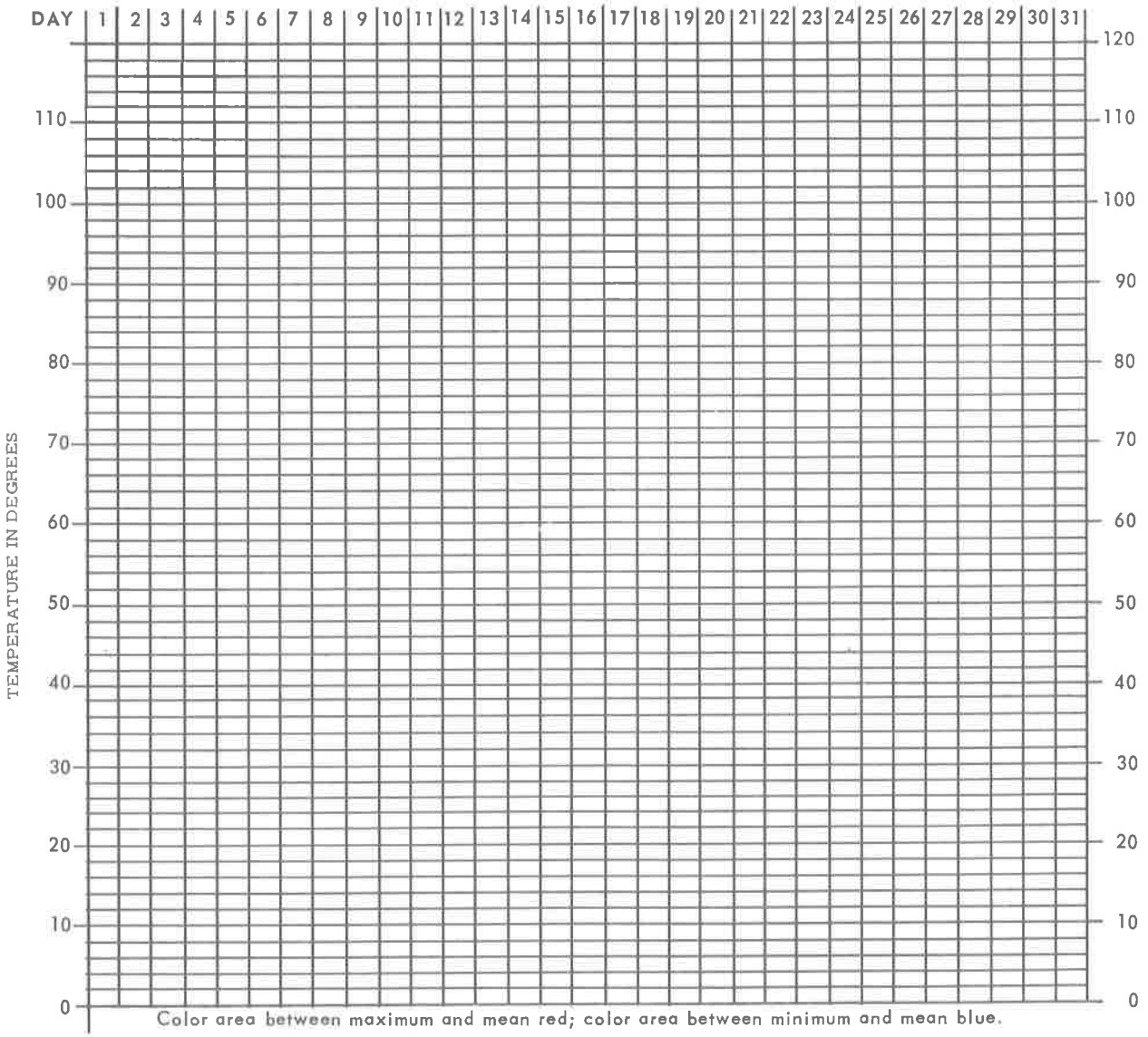
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

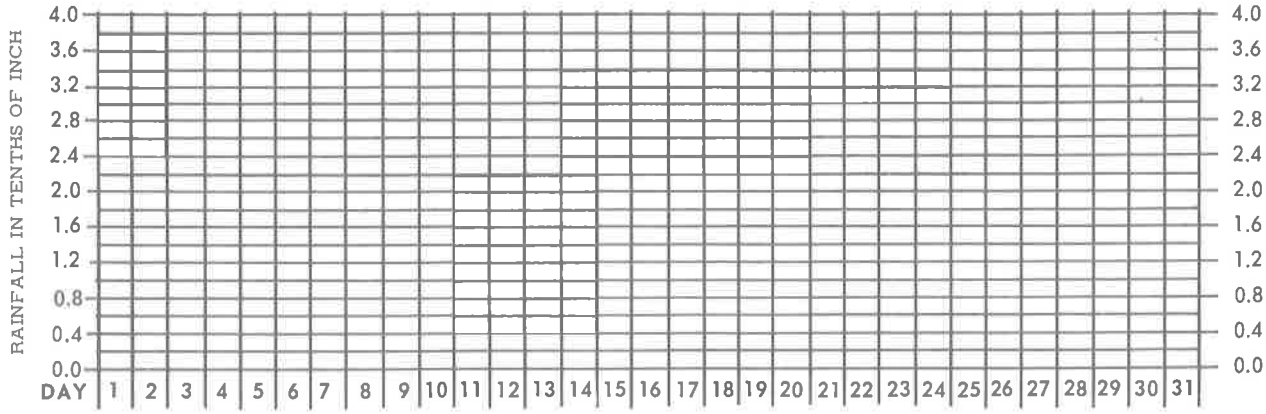
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

DAY	N	NE	E	SE	S	SW	W	NW
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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

Month _____ Year _____

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

Vegetables: _____

Trees: _____

Insects: _____

Birds and animals: _____

People: _____

Other: _____

MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____

Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
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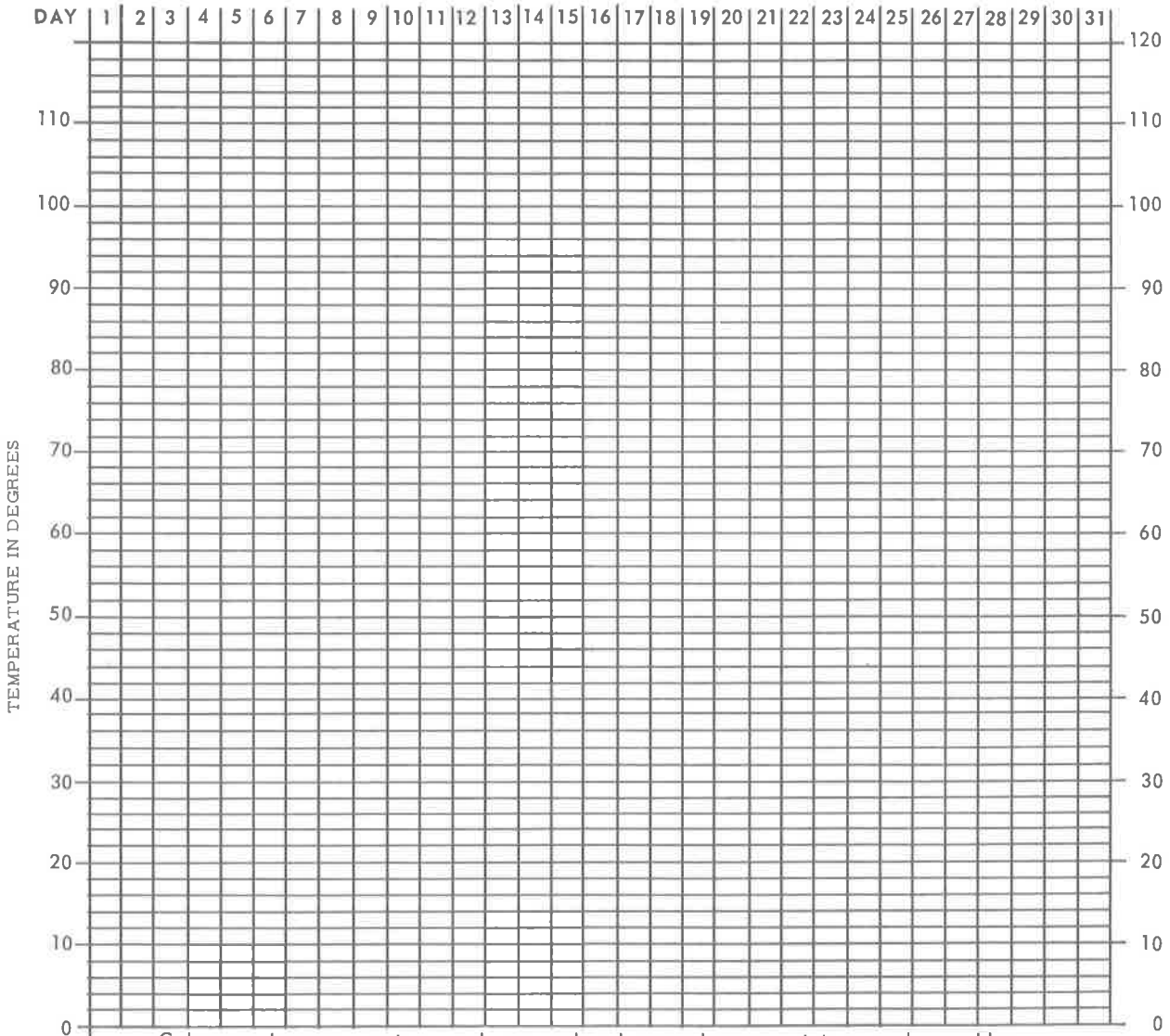
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

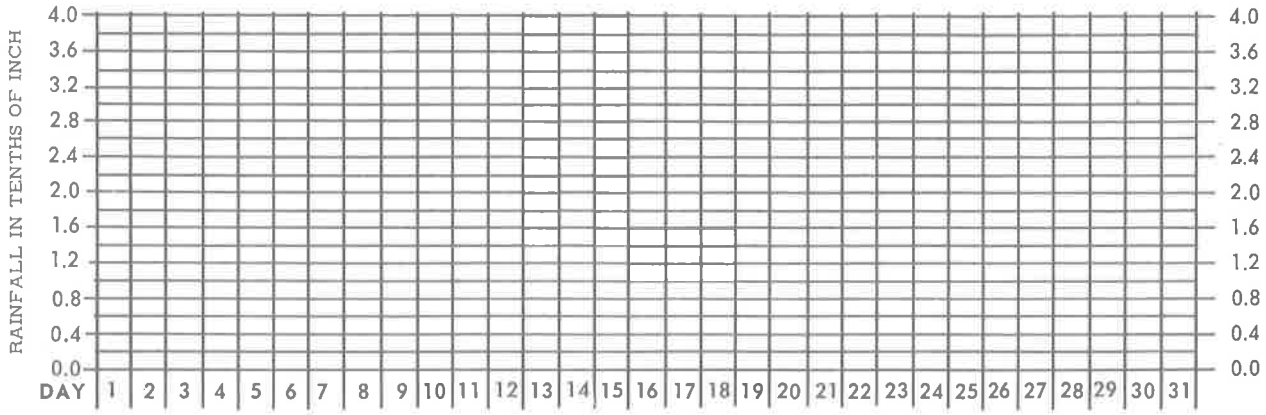
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
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	p.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ _____
Month Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

_____

Vegetables: _____

_____

_____

Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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MONTHLY CLIMATOLOGY RECORD SHEET

Month _____ Year _____

Location of My Station _____ Location of Weather Bureau Station _____

Day	Data from My Station				Data from Weather Bureau			
	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)	Max. Temp.	Min. Temp.	Mean Temp.	Rainfall (in tenths)
1								
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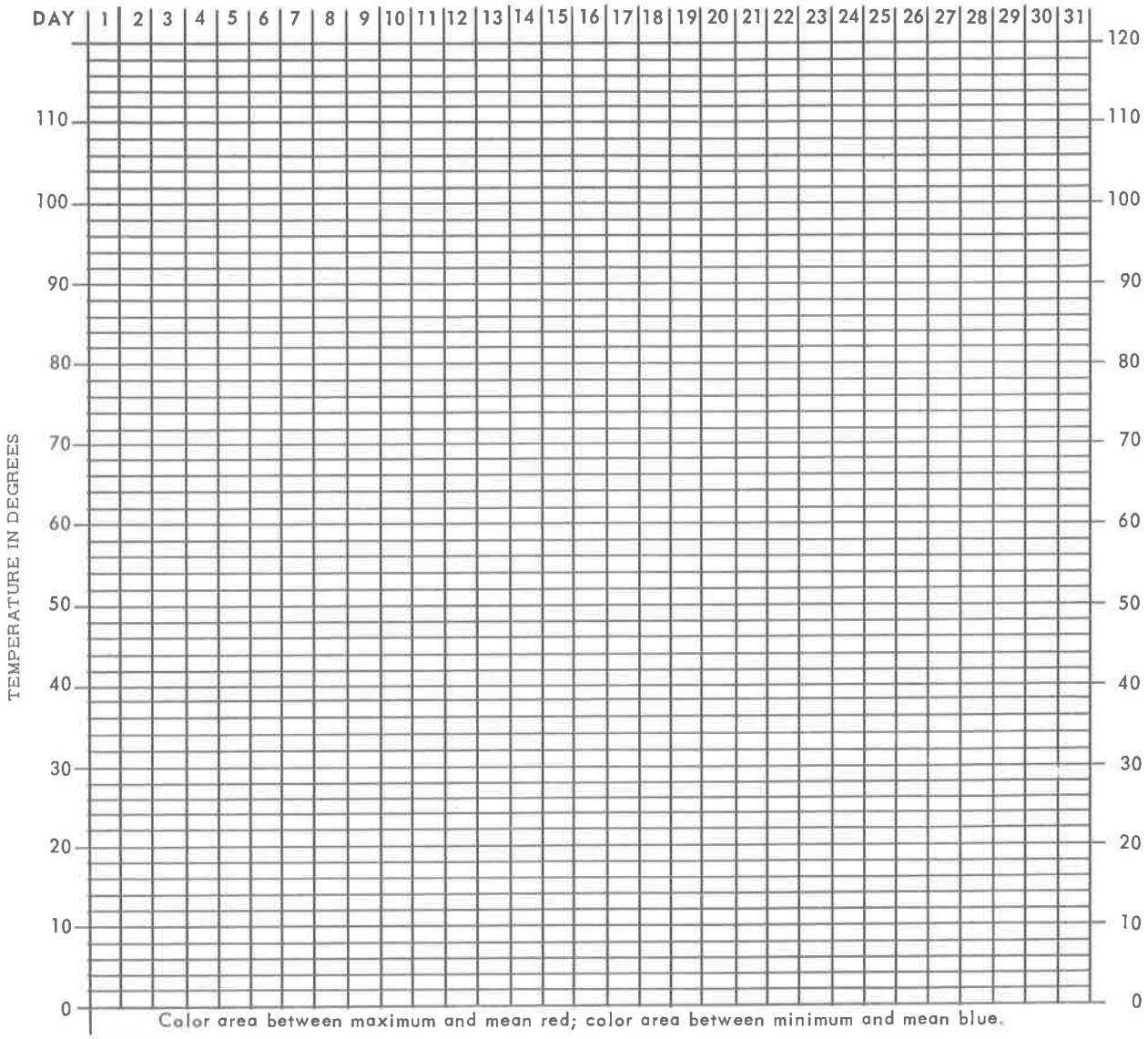
	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall	Mean Max. Temp.	Mean Min. Temp.	Ave. Mean Temp.	Total Rainfall

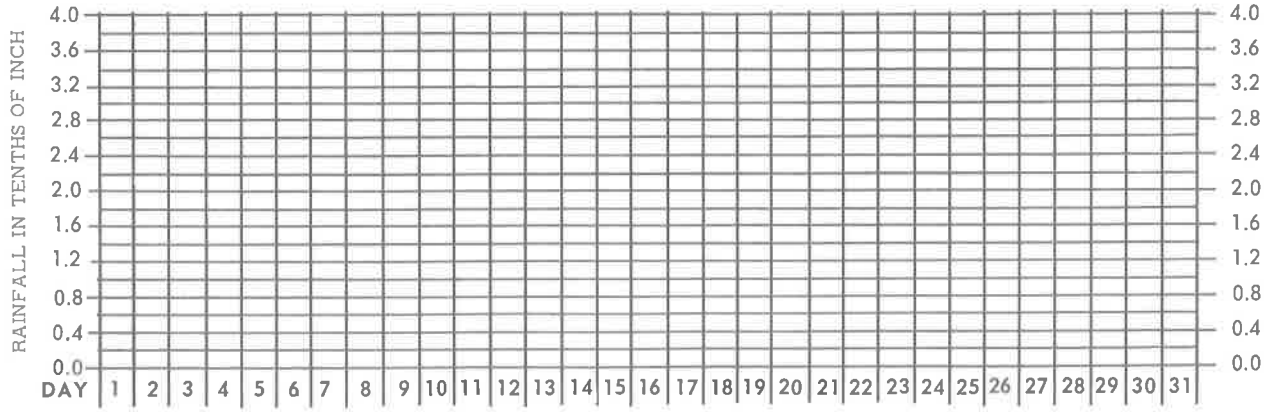
MONTHLY TEMPERATURE CHART

Month _____ Year _____



Color area between maximum and mean red; color area between minimum and mean blue.

MONTHLY RAINFALL CHART



WIND DIRECTION DATA SHEET

(Place an X in the proper square.)

_____ Month _____ Year

My Station

DAY		N	NE	E	SE	S	SW	W	NW
1	a.m.								
	p.m.								
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Wind Predominance									

(Total X's in each column)

Weather Bureau Station

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Wind Predominance								

(Total X's in each column)

MONTHLY OBSERVATION SHEET

_____ _____
Month Year

Observe the animals, vegetables, flowers, trees, and people. Are the birds nesting, mating, etc.? Are the leaves changing color, budding, etc.? What are people wearing? What vegetables are coming up? What flowers are blooming? Look for changes that indicate changing weather.

Flowers: _____

_____

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Vegetables: _____

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Trees: _____

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Insects: _____

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Birds and animals: _____

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People: _____

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Other: _____

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CLIMATOLOGY PROJECT SUMMARY

Climate affects all plant, animal, and human activity. What seasonal climatic effects have you observed regarding plant growth and flowering, animal gains and condition, outdoor occupations, and your family activities and dress? On the basis of your climate records, can you tell why these changes occur?

Record of Demonstrations

Record of Exhibits

ANNUAL SUMMARY OF WEATHER DATA

Year_____

Month	Mean Max. Temp.		Mean Min. Temp.		Average Mean Temp.		Rainfall Total		Predominant Wind Direction	
	My	W.B.	My	W.B.	My	W.B.	My	W.B.	My	W.B.
June										
July										
August										
September										
October										
November										
December										
January										
February										
March										
April										
May										

Climatology Project Summary

(This section to be removed from your book for office summary.)

Climatology unit completed: ☐ Beginning ☐ Intermediate ☐ Advanced

Name_____

Club_____

Age_____ Date started_____ Date completed_____

List the devices made this year to collect climatic data.

_____

_____

_____

_____

Indicate number of months recorded this year.

Temp. max., min., mean	
Rainfall	
Wind direction	
Soil temperature	
Wind speed	
Relative humidity	
Barometric pressure	
Temp. at varied locations	

_____ Signature (member)

_____ Signature (4-H Club Leader)

Cooperative Extension work in Agriculture and Home Economics, College of Agriculture, University of California, and United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, and June 30, 1914. George B. Alcorn, Director, California Agricultural Extension Service.

DECEMBER 1966--2½M