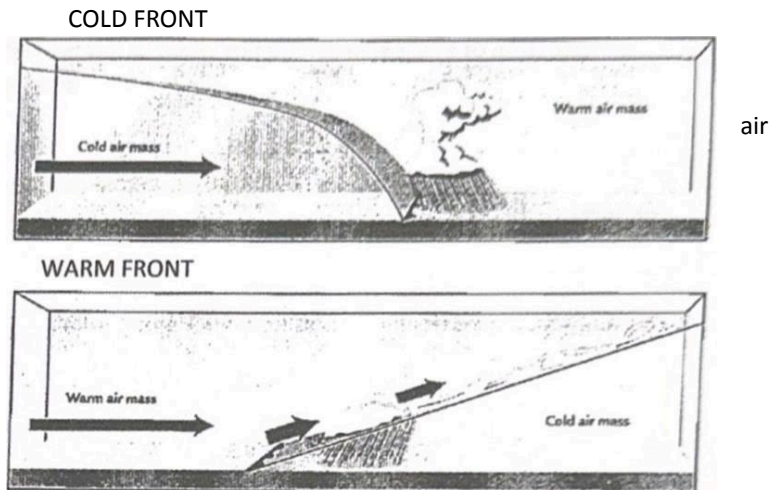


Name: \_\_\_\_\_

## Forecasting Weather (with use of a weather map cards)

Meteorologists collect data about the earth's weather. They use that data to construct weather maps. Meteorologists then use those maps to predict what the weather will be like in the next few hours, the next day, or for the next several days. This is known as a weather forecast.

When forecasting weather, meteorologists sometimes refer to cold fronts, which form when cold air moves in and replaces warm air. The cold pushes the warm air up, forming high columns of clouds, as shown on the right. Cold fronts usually cause cooler temperatures. A warm front occurs when warm air moves in and replaces cooler air. Warm fronts bring in warmer temperatures. They also create cloudy conditions that usually last longer than the cloudy conditions produced by cold fronts.



### Procedure

Analyze each map set (two days at a time) as you answer the questions below.

#### 1. Map set 1: August 24 & 25

- a. Identify the type and location of the following:
  - Weather Fronts
  - Precipitation
  - Areas of High and Low Pressure
  - Unusual weather events, such as a tornado watch or a hurricane
- b. Work with your team to write a weather report for these two days. You can do this by describing the weather that is associated with each weather symbol. As you summarize current weather conditions, make sure to describe:
  - Weather fronts and possible changes in temperature
  - Areas of precipitation
  - Clear or cloudy skies due to changing pressure e Any unusual weather events, such as a tornado watch or a hurricane

Write your weather report in complete sentences and in the present tense, as if you were reporting the weather on television or in a podcast.

## 2. Map set 2: August 26 & 27

a. Identify the type and location of the following:

- Weather Fronts
- precipitation
- Areas of High and Low Pressure
- Unusual weather events, such as a tornado watch or a hurricane

b. Work with your team to write a weather report for these two days. You can do this by describing the weather that is associated with each weather symbol. As you summarize current weather conditions, make sure to describe:

- Weather fronts and possible changes in temperature
- Areas of precipitation
- Clear or cloudy skies due to changing pressure
- Any unusual weather events, such as a tornado watch or a hurricane

Write your weather report in complete sentences and in the present tense, as if you were reporting the weather on television or in a podcast.

## 3. Map set 3: August 28 29

a. Identify the type and location of the following:

- Weather Fronts
- Precipitation
- Areas of High and Low Pressure
- Unusual weather events, such as a tornado watch or a hurricane

b. Work with your team to write a weather report for these two days. You can do this by describing the weather that is associated with each weather symbol. As you summarize current weather conditions, make sure to describe:

- Weather fronts and possible changes in temperature
- Areas of precipitation
- Clear or cloudy skies due to changing pressure e Any unusual weather events, such as a tornado watch or a hurricane

Write your weather report in complete sentences and in the present tense, as if you were reporting the weather on television or in a podcast.

4. Map set 4: August 30 & 31

a. Identify the type and location of the following:

- Weather Fronts
- Precipitation
- Areas of High and Low Pressure
- Unusual weather events, such as a tornado watch or a hurricane

b. Work with your team to write a weather report for these two days. You can do this by describing the weather that is associated with each weather symbol. As you summarize current weather conditions, make sure to describe:

- Weather fronts and possible changes in temperature
- Areas of precipitation
- Clear or cloudy skies due to changing pressure
- Any unusual weather events, such as a tornado watch or a hurricane

Write your weather report in complete sentences and in the present tense, as if you were reporting the weather on television or in a podcast.

5. Based on the weather reports you created based on the eight weather maps,, think about the pattern of weather from August 24 to 31 . Then use your knowledge of how weather moves across the United States to draw on the map below where you predict the likely position of any fronts, temperature changes, pressure changes, precipitation, and severe weather for September 1<sup>st</sup>.



6. Create a weather forecast for Cleveland, Ohio on September 1.

Analysis

1. Based on the weather reporting and the weather patterns shown on the eight maps you examined:
  - a. In what direction does weather generally travel across the United States?
  - b. How does the movement of the atmosphere over other parts of the country (and world) affect weather locally?

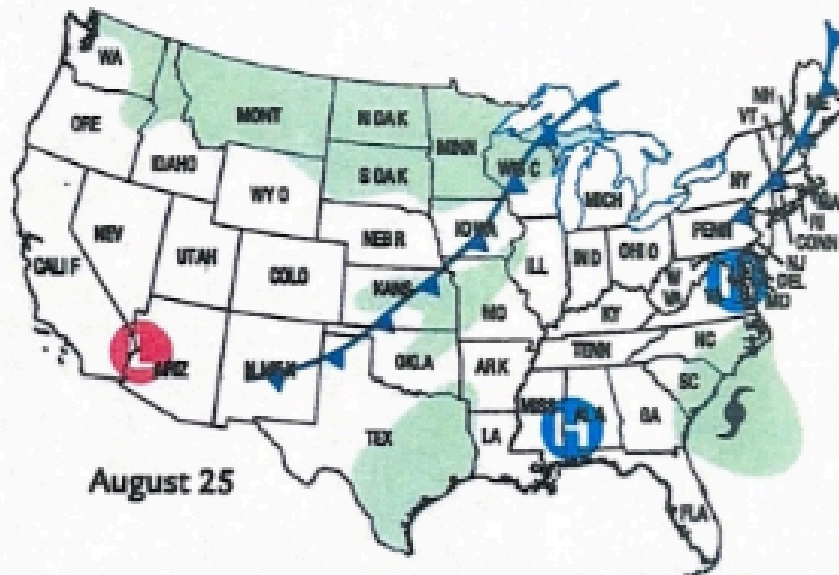
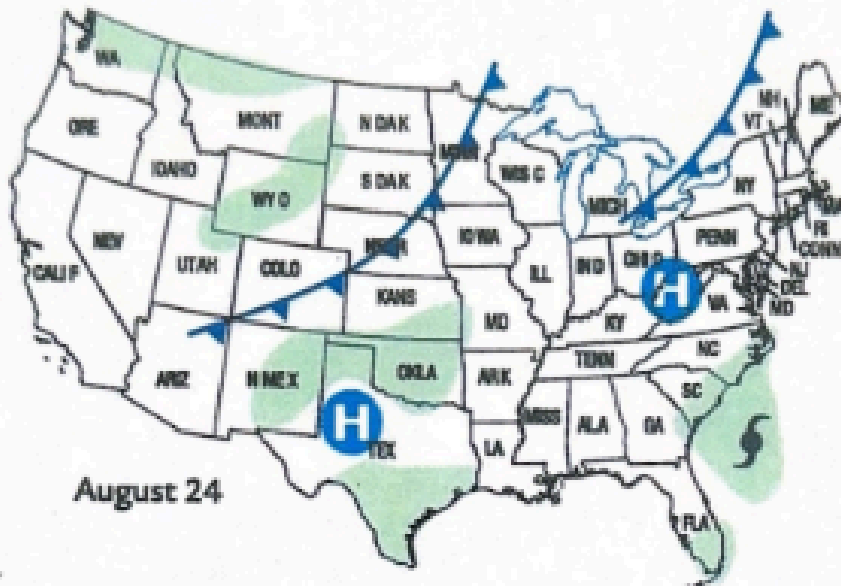
2. To the right is weather data collected for Iowa on September 15. Use the information provided and your knowledge of weather maps to place the appropriate weather symbols on the map of Iowa. Be sure to construct a key for your map.

- Warm front extending from Lincoln, Nebraska northeast to Mason City, Iowa
- Rain all along the warm front
- Low-pressure system in and around Des Moines, Iowa



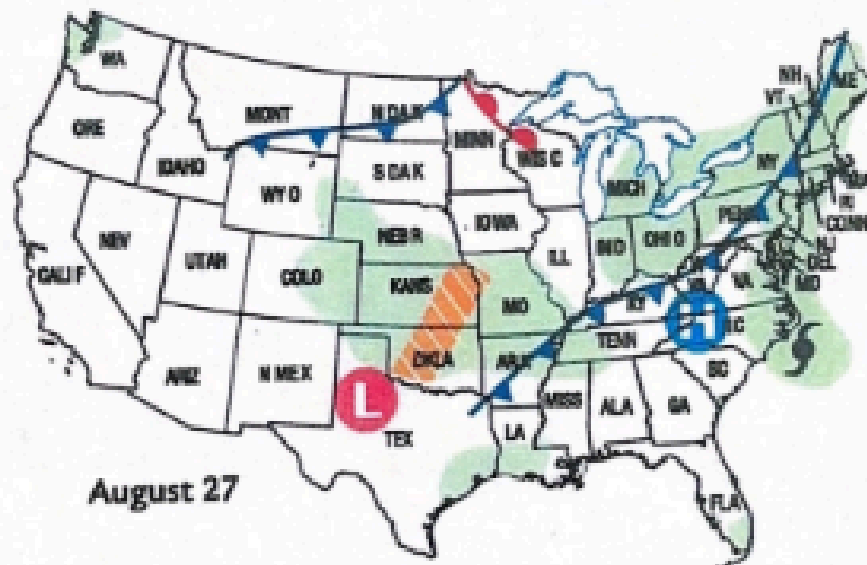
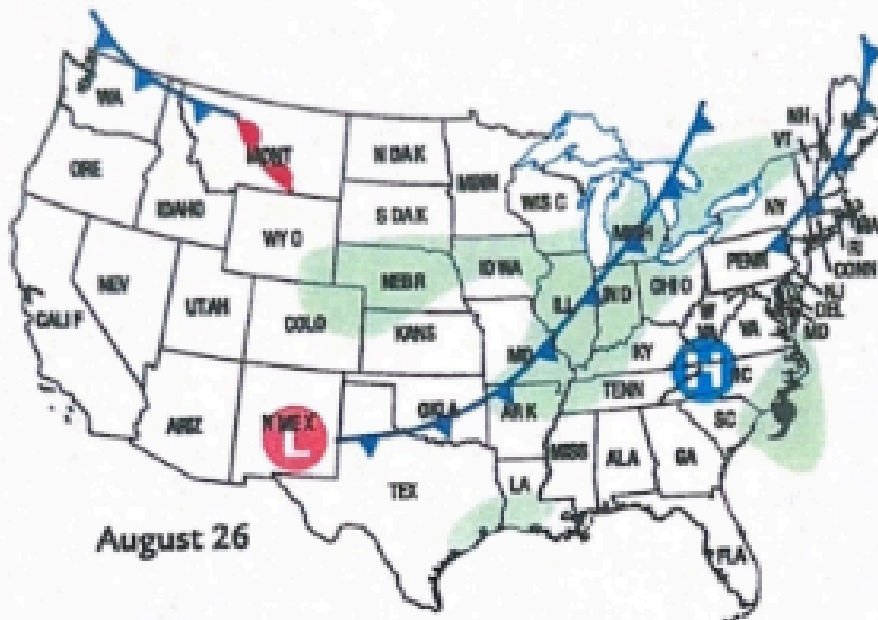
3. Analyze each of the statements below. Are they accurate? AND provide an explanation to support your claim.
  - There was precipitation of some form somewhere in the U.S. every day from August 24 to 31.
  - A hurricane reached the state of Texas.
  - Weather moves from west to east across the United States.
  - Areas of low pressure can only be found along the coasts.
  - Any tornadoes that occurred were in states on the west coast of the United States.
4. People often complain about the unreliability of weather forecasts. Why do you think meteorologists are sometimes wrong about what the future weather will be like?

## LAB-AIDS #4805 - Forecasting Weather Weather Maps for August 24 & 25



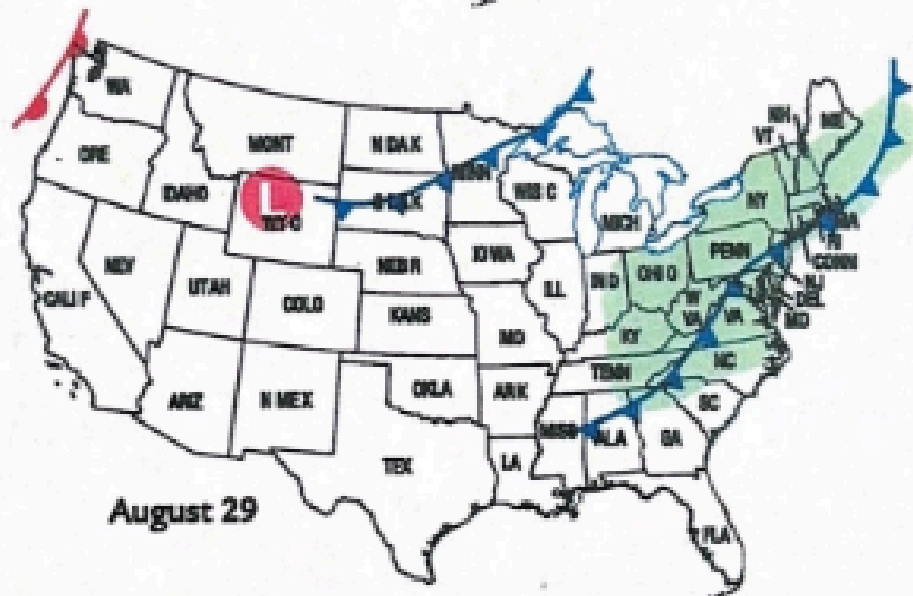
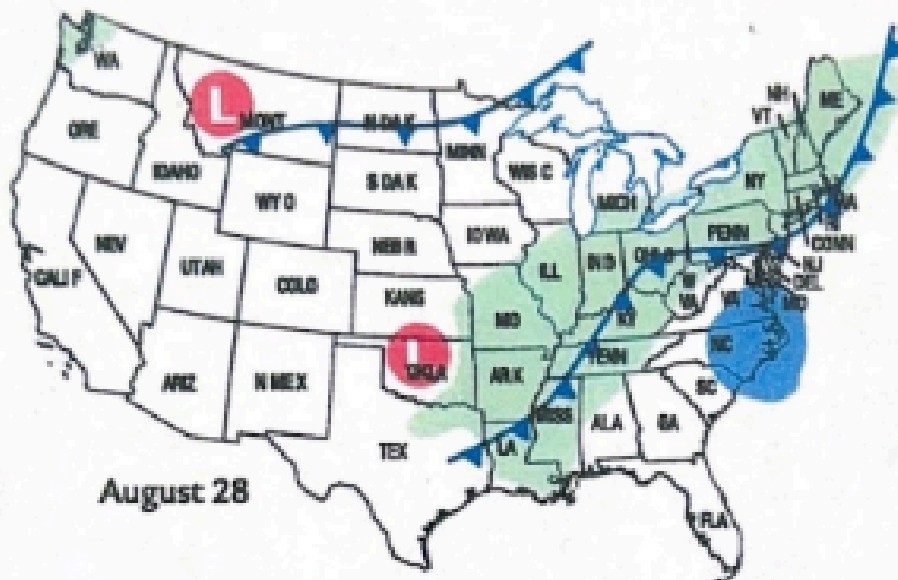
Weather Map Symbols					
Symbol	Meaning	Associated Weather	Symbol	Meaning	Associated Weather
	Precipitation	Rain, snow, fog, or other forms of precipitation		High pressure	Clear skies
	Cold front	Cooler temperatures, possible precipitation		Hurricane	Damaging winds, rain, possible flooding
	Warm front	Warmer temperatures, possible precipitation		Tornado watch	Area where tornadoes may occur, possible severe thunderstorms
	Low pressure	Cloudy skies, possible precipitation		Tropical storm	Very strong winds and heavy rains

## LAB-AIDS #480S - Forecasting Weather Weather Maps for August 26 & 27



Weather Map Symbols					
Symbol	Meaning	Associated Weather	Symbol	Meaning	Associated Weather
	Precipitation	Rain, snow, fog, or other forms of precipitation		High pressure	Clear skies
	Cold front	Cooler temperatures, possible precipitation		Hurricane	Damage winds, rain, possible flooding
	Warm front	Warmer temperatures, possible precipitation		Tornado watch	Area where tornadoes may occur, possible severe thunderstorms
	Low pressure	Cloudy skies, possible precipitation		Tropical storm	Very strong winds and heavy rains

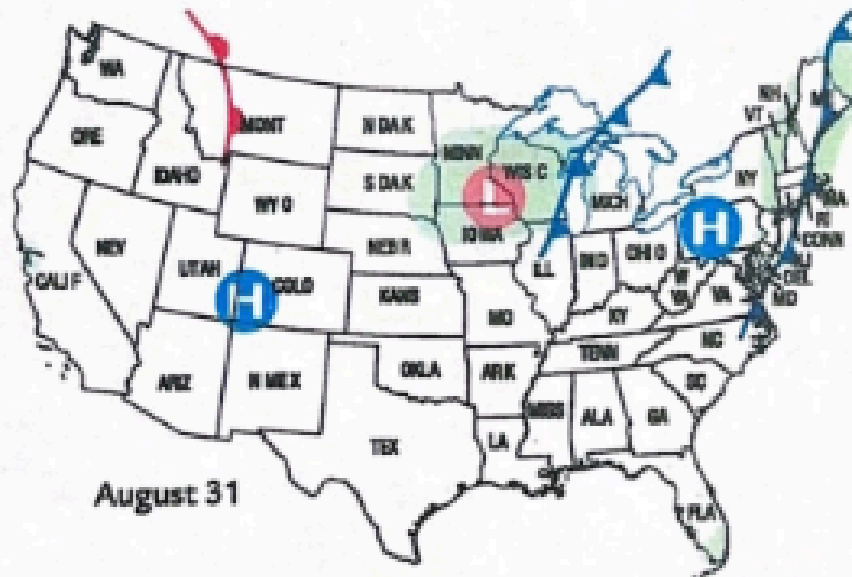
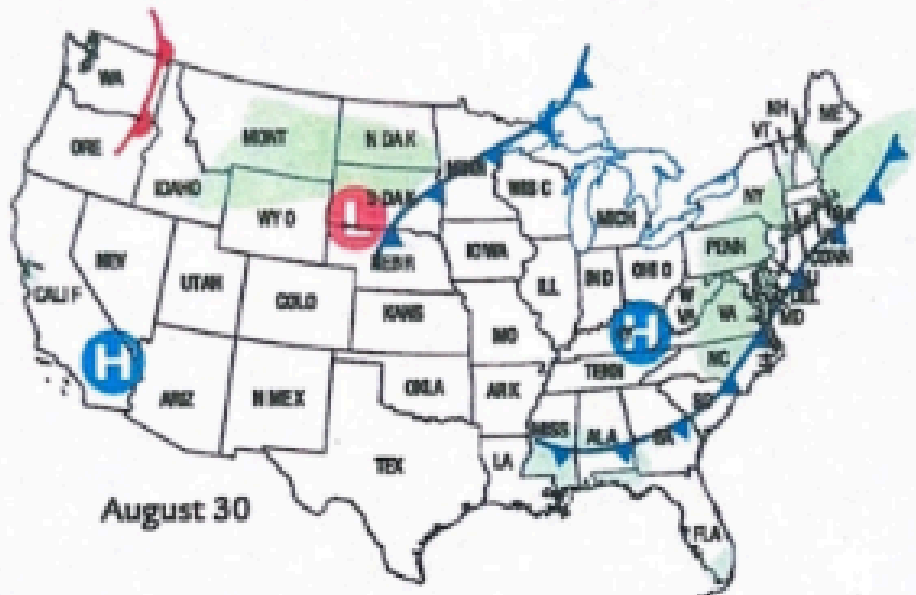
## LAB-AIDS #4805 - Forecasting Weather Weather Maps for August 28 & 29



### Weather Map Symbols

Symbol	Meaning	Associated Weather	Symbol	Meaning	Associated Weather
	Precipitation	Rain, snow, fog, or other forms of precipitation		High pressure	Clear skies
	Cold front	Cooler temperatures, possible precipitation		Hurricane	Disturbing winds, rain, possible flooding
	Warm front	Warmer temperatures, possible precipitation		Tornado watch	Area where tornadoes may occur, possible severe thunderstorms
	Low pressure	Cloudy skies, possible precipitation		Tropical storm	Very strong winds and heavy rains

## LAB-AIDS #480S - Forecasting Weather Weather Maps for August 30 & 31



### Weather Map Symbols

Symbol	Meaning	Associated Weather	Symbol	Meaning	Associated Weather
	Precipitation	Rain, snow, fog, or other forms of precipitation		High pressure	Clear skies
	Cold front	Cooler temperatures, possible precipitation		Hurricane	Damaging winds, rain, possible flooding
	Warm front	Warmer temperatures, possible precipitation		Tornado watch	Area where tornadoes may occur, possible severe thunderstorms
	Low pressure	Cloudy skies, possible precipitation		Tropical storm	Very strong winds and heavy rains