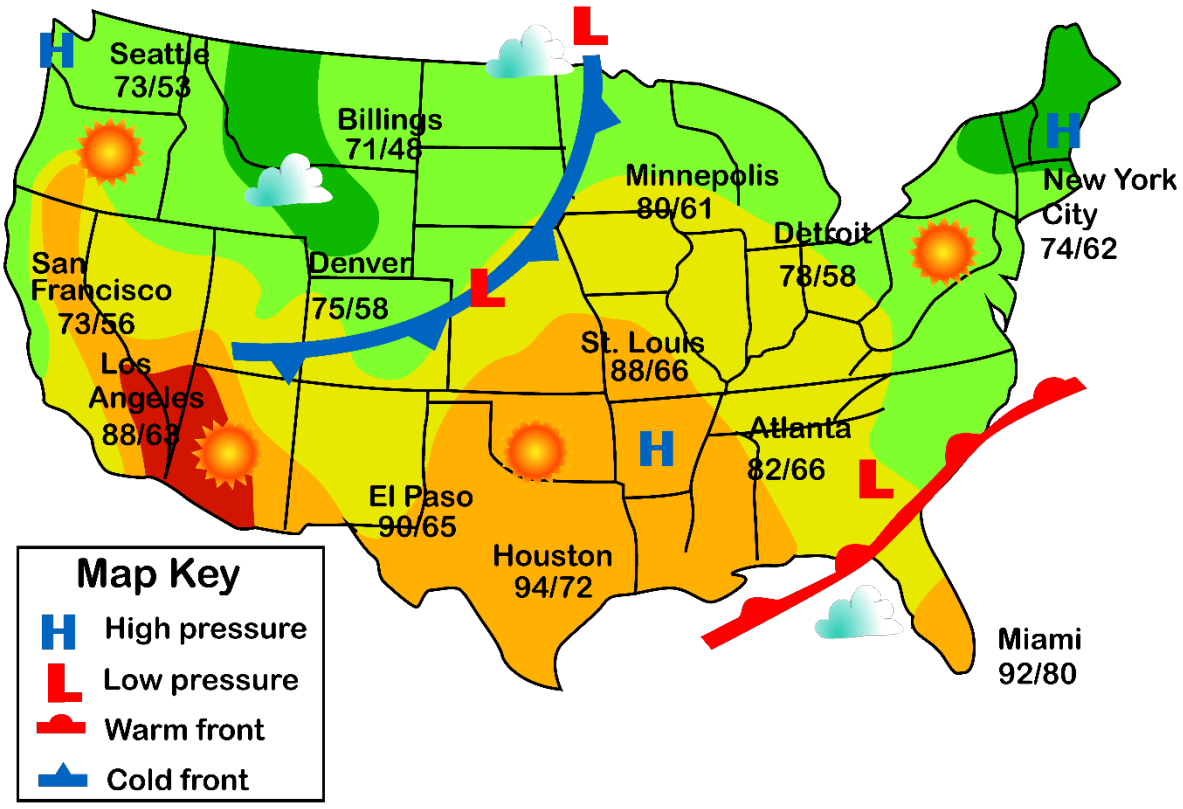
GRADE 5

SCIENCE REVIEW
WORKSTATIONS

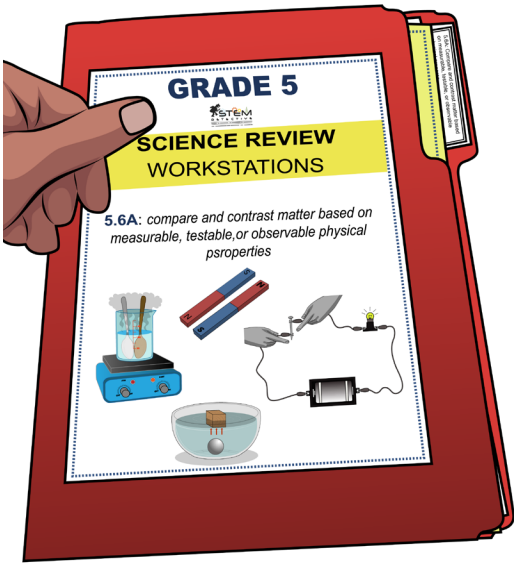
4.10C: *differentiate between weather and climate*



How to Assemble Review Workstation Folders

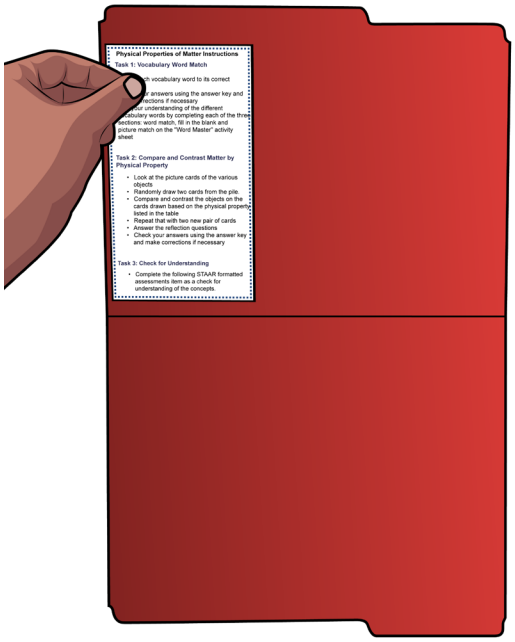
Step One

Print two copies of Template 1. Paste one on the front of the flat folder, and the other on the front of the pocket folder.



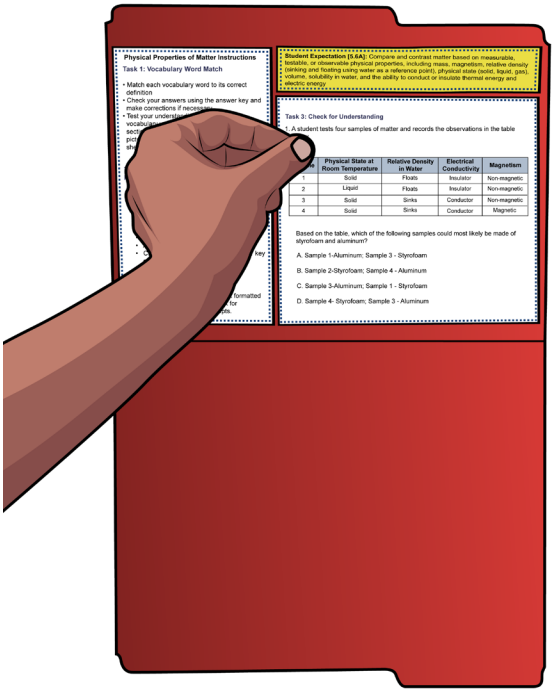
Step Two

Open the flat folder. Turn Template 2 sideways, like a landscape page, and paste it on the top half of the left side.



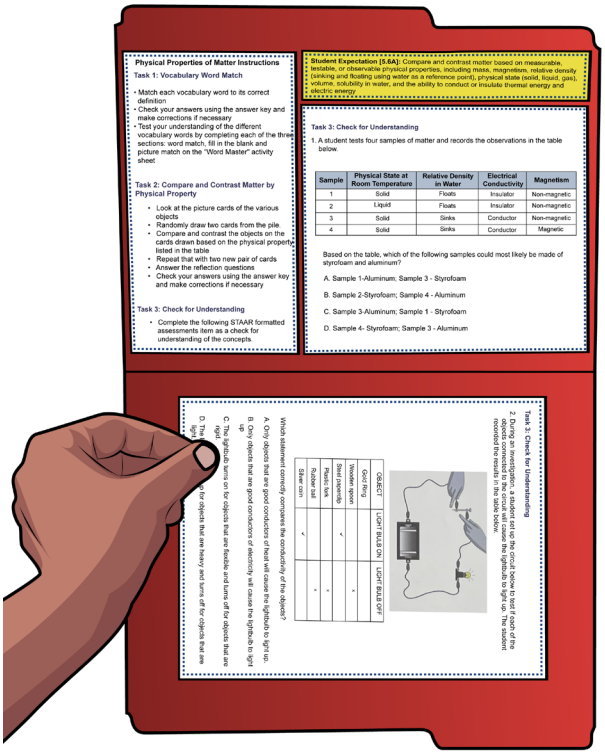
Step Three

Print out Template 3, which contains the student expectation for the folder. Paste it in the top right corner inside the flat folder. Directly underneath that, paste Template 4, which is the Check for Understanding for the workstation.



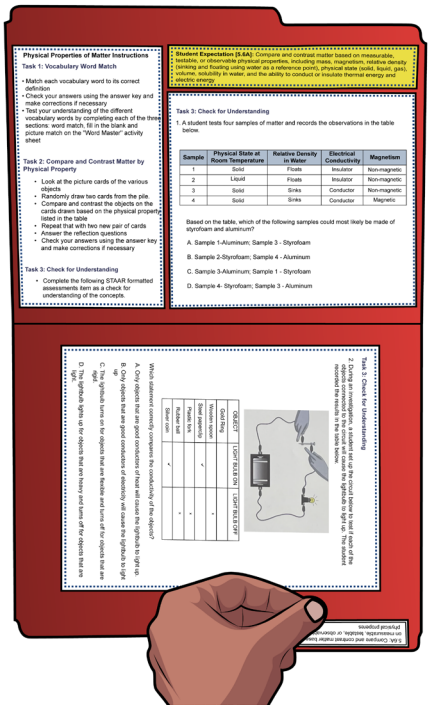
Step Four

On the bottom half of the flat folder, choose one of the following: either paste question two from the check for understanding or paste the first page of Task Two from the workstation.



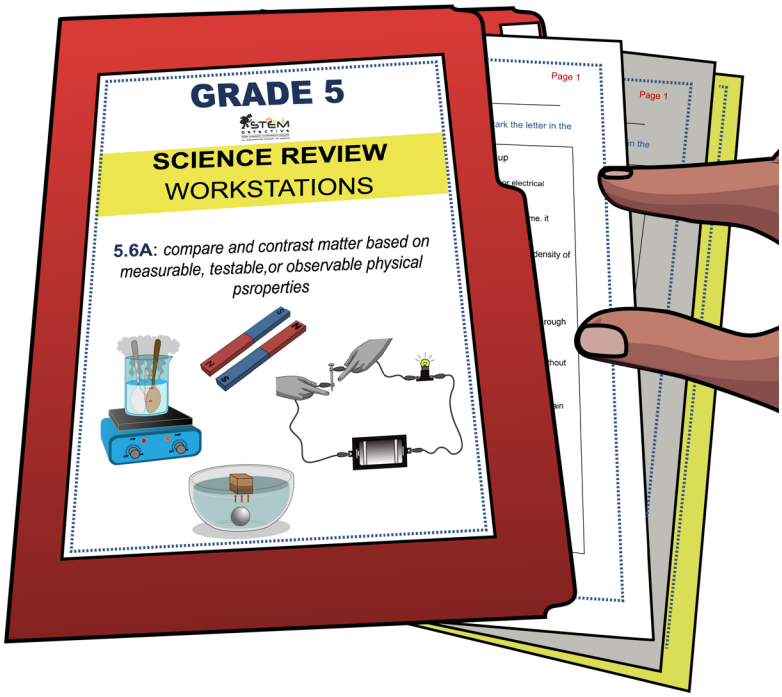
Step Five

Take Template Five, the small label with the student expectation, and paste it on the edge of the flat folder—the tab that sticks out when it's closed. This makes it easy to identify when folders are stacked.



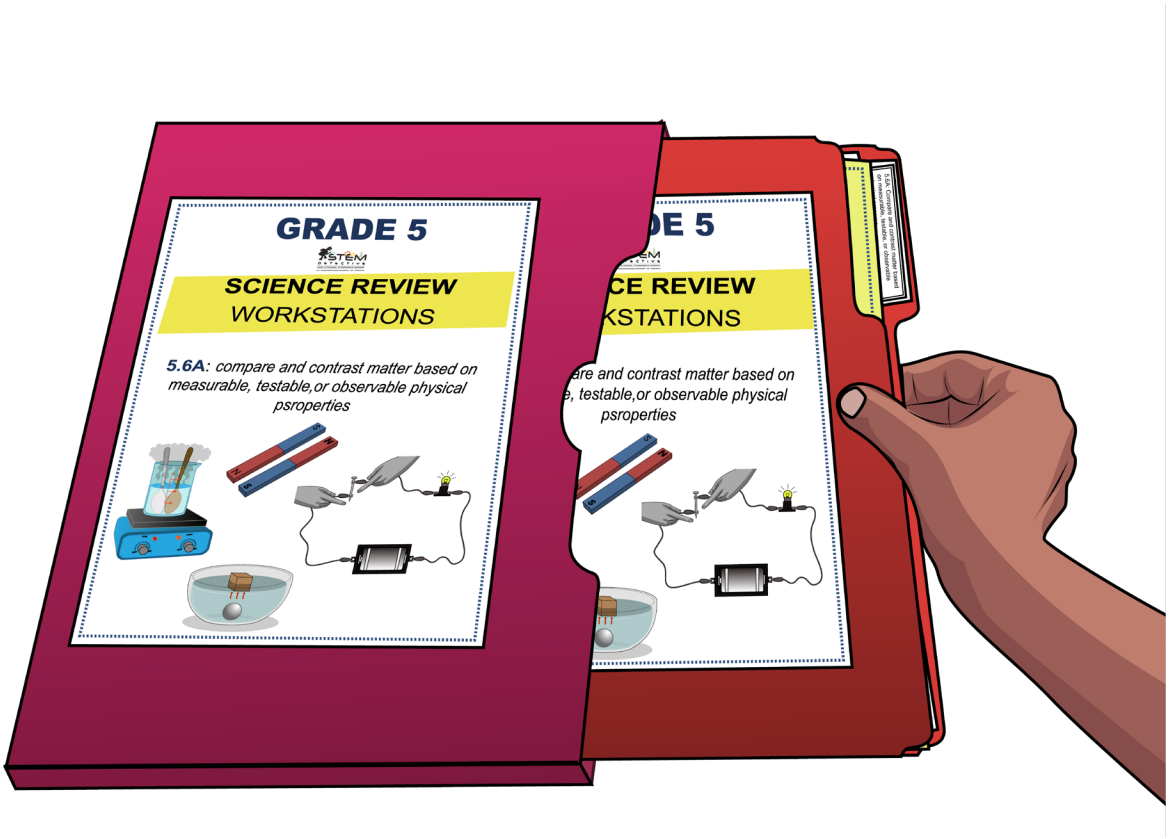
Step Six

Insert three loose items inside the flat folder without gluing them. First, the activity sheet or fact sheet, printed on cardstock for durability. Second, a class set of student response sheets. And third, the Answer Key—preferably placed inside a small envelope for privacy before sliding it in.



Step Seven

Use the pocket folder to store everything. Slide the assembled flat folder inside it, along with any additional materials students need to complete the activity—such as card sorts, dice, or manipulatives. This way, all components are stored in one organized and portable folder.



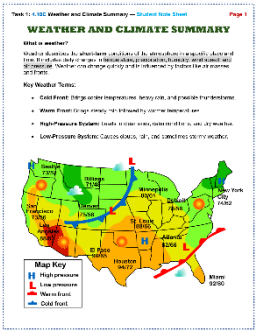
Final Note:

If you have any questions or run into any issues while putting your review folders together, feel free to contact us at benjamin.glover@stemdetective.com. We're always here to help!

4.10C Weather & Climate

Task 1: Weather and Climate Summary

- Read the Fact Sheet: “Weather and Climate Summary”
- Use the information from the Fact Sheet to help complete the Student Notes Sheet.
- Check your answers using the answer key and make corrections if necessary



Task 2: Weather or Climate?

- For each statement on the card, identify whether it describes weather or climate
- Record your answers on the Student Recording Sheet
- Check your answers using the answer key and make corrections if necessary

Task 3: Check for Understanding

- Complete the following STAAR formatted assessments item as a check for understanding of the concepts.

Task 3: Check for Understanding

Read each question carefully. Choose the best answer to each question. For open-response questions, determine the best answer to the question.

1. The chart below shows the average temperature and precipitation for three Texas cities over the past 30 years.

City	Average Summer Temperature	Annual Precipitation
Houston	92°F	50 inches
El Paso	95°F	9 inches
Dallas	94°F	37 inches

Based on the data, which conclusion is best supported?

A. The weather in these cities changes often throughout the year.

B. El Paso usually receives much less rainfall than Houston.

C. Dallas had a cold front last week that caused lower temperatures.

D. Houston had a thunderstorm yesterday, making it the rainiest city in Texas.

Student Expectation [4.10C]: 4.10(C) differentiate between weather and climate

4.10C: differentiate between weather and climate

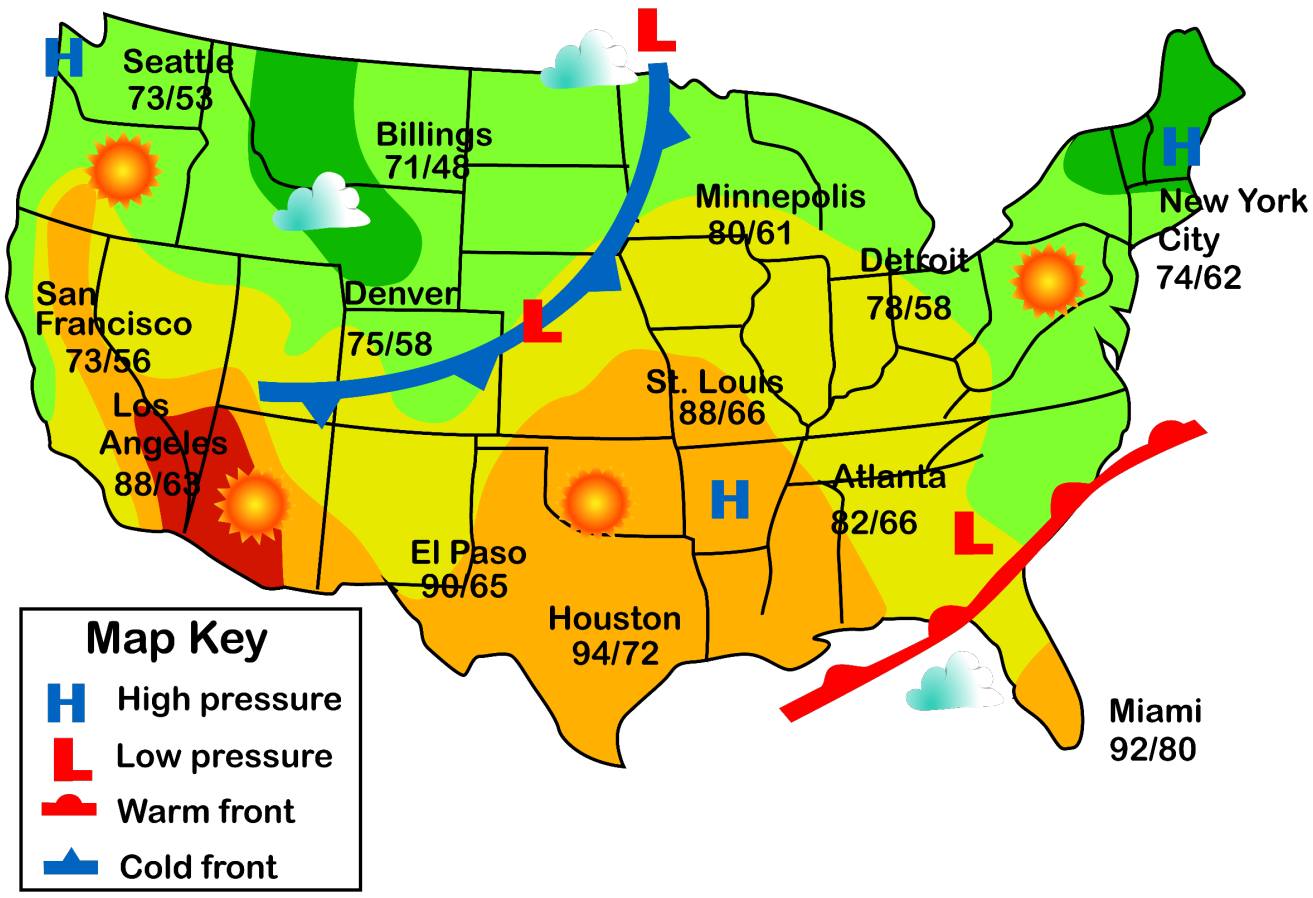
WEATHER AND CLIMATE SUMMARY

What is weather?

Weather describes the **short-term** conditions of the atmosphere in a specific place and time. It includes daily changes in temperature, precipitation, humidity, wind speed, and air pressure. Weather can change quickly and is influenced by factors like air masses and fronts.

Key Weather Terms:

- **Cold Front:** Brings cooler temperatures, heavy rain, and possible thunderstorms.
- **Warm Front:** Brings steady rain followed by warmer temperatures.
- **High-Pressure System:** Leads to clear skies, calm conditions, and dry weather.
- **Low-Pressure System:** Causes clouds, rain, and sometimes stormy weather.



WEATHER AND CLIMATE SUMMARY

What is Climate?

Climate refers to the **long-term** patterns of weather in a particular area, typically measured over 30 years or more. It includes the average temperature, precipitation, and seasonal changes. Different regions have distinct climate zones, such as tropical, desert, temperate, and polar climates.

Key Climate Terms:

- **Long-term patterns** of temperature and precipitation.
- **Climate Zones:** Areas with similar weather patterns over time.
- **Average Conditions** over many years.

SUMMARY – WEATHER VS CLIMATE

Weather is what is happening now or over a short period (hours to days). **Climate** describes the usual conditions of a region over a long time (decades or centuries).

Weather	Climate
• Today's forecast • Stormy afternoon • Cold front moving in • Heavy rain tomorrow • Windy with scattered clouds	• Average annual rainfall • Typically hot, dry summers • Usually mild winters in this region • Tropical and humid environment • Long-term temperature trends

WEATHER AND CLIMATE SUMMARY

What is weather?

Weather describes the _____ conditions of the atmosphere in a specific place and time. It includes daily changes in temperature, precipitation, humidity, wind speed, and air pressure. Weather can _____ and is influenced by factors like air masses and fronts.

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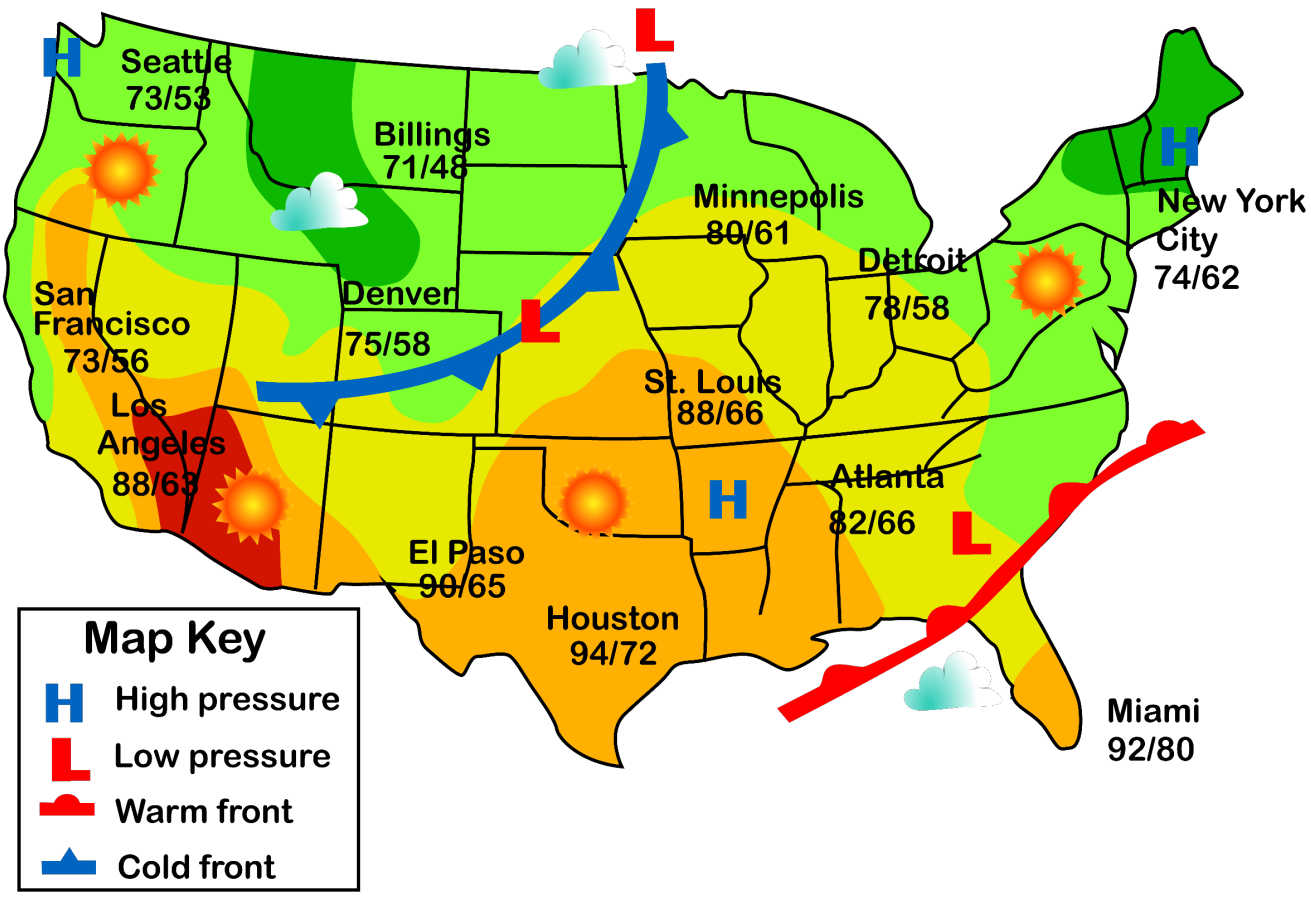

WEATHER AND CLIMATE SUMMARY

What is Climate?

Climate refers to the _____ patterns of weather in a particular area, typically measured over 30 years or more. It includes the average temperature, precipitation, and seasonal changes. Different regions have distinct climate zones, such as _____,_____,_____ and polar climates.

Key Climate Terms:

- **Long-term patterns** of temperature and precipitation.
- **Climate Zones:** Areas with similar weather patterns over time.
- **Average Conditions** over many years.

SUMMARY – WEATHER VS CLIMATE

Weather is what is happening now or _____ (hours to days).

Climate describes the _____ of a region over a _____

(decades or centuries).

Weather

-
-
-
-
-

Climate

-
-
-
-
-

Name: _____ **Date**: _____

Directions: Cut out each card. For each statement, decide if it describes **weather** or **climate**. Underline the key evidence in the statement to support your choice. Record your answers on the Student Response Sheet.

It was sunny and 95°F in Houston this afternoon.	West Texas has dry, hot summers and mild winters.
A thunderstorm in Dallas brought heavy rain and strong winds last night.	Thick fog covered San Antonio this morning, making it hard to see while driving.
The Gulf Coast region is typically warm and humid year-round.	Over the past 50 years, Austin's average summer temperature has risen by 2°F.

A cold front moving into Fort Worth tomorrow will drop temperatures by 20°F.	El Paso receives very little rainfall throughout the year, making it an arid region.
Strong winds in Amarillo yesterday caused dust storms across the Panhandle.	South Texas generally experiences mild winters and very hot summers.

Name: _____ **Date**: _____

Directions: For each statement, decide if it describes **weather or climate**. Underline the **key evidence** in the statement to support your choice. Record your answers on the Student Response Sheet.

STATEMENT	WEATHER OR CLIMATE?
It was sunny and 95°F in Houston this afternoon.	
West Texas has dry, hot summers and mild winters.	
A thunderstorm in Dallas brought heavy rain and strong winds last night.	
Thick fog covered San Antonio this morning, making it hard to see while driving.	
The Gulf Coast region is typically warm and humid year-round.	
Over the past 50 years, Austin's average summer temperature has risen by 2°F.	
A cold front moving into Fort Worth tomorrow will drop temperatures by 20°F.	
El Paso receives very little rainfall throughout the year, making it an arid region.	
Strong winds in Amarillo yesterday caused dust storms across the Panhandle.	
South Texas generally experiences mild winters and very hot summers.	

Name: _____ **Date**: _____

Directions: For each statement, decide if it describes **weather** **or** **climate**. Underline the key evidence in the statement to support your choice. Record your answers on the Student Response Sheet.

STATEMENT	WEATHER OR CLIMATE?
It was sunny and 95°F in Houston this afternoon. *Afternoon = short-term*	Weather
West Texas has dry, hot summers and mild winters. *Summers/winters = long-term*	Climate
A thunderstorm in Dallas brought heavy rain and strong winds last night. *Last night = short-term*	Weather
Thick fog covered San Antonio this morning, making it hard to see while driving. *This morning = short-term*	Weather
The Gulf Coast region is typically warm and humid year-round. *Typically warm = long-term*	Climate
Over the past 50 years, Austin's average summer temperature has risen by 2°F. *long-term*	Climate
A cold front moving into Fort Worth tomorrow will drop temperatures by 20°F. *Tomorrow = short-term*	Weather
El Paso receives very little rainfall throughout the year, making it an arid region. *long-term*	Climate
Strong winds in Amarillo yesterday caused dust storms across the Panhandle. *Yesterday = short-term*	Weather
South Texas generally experiences mild winters and very hot summers.	Climate

Name: _____ **Date**: _____

Read each question carefully. Choose the best answer to each question. For open-response questions, determine the best answer to the question.

1. The chart below shows the average temperature and precipitation for three Texas cities over the past 30 years.

City	Average Summer Temperature	Annual Precipitation
Houston	92°F	50 inches
El Paso	95°F	9 inches
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Based on the data, which conclusion is best supported?

A. The weather in these cities changes often throughout the year.

B. El Paso usually receives much less rainfall than Houston.

C. Dallas had a cold front last week that caused lower temperatures.

D. Houston had a thunderstorm yesterday, making it the rainiest city in Texas.

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2. Which **TWO** of the following statements describe climate rather than weather?

A. ☐ The high temperature in Houston today was 92°F.

B. ☐ The average winter temperature in El Paso is 50°F.

C. ☐ A hurricane is approaching the Texas coastline.

D. ☐ The Texas Panhandle is known for dry and windy conditions year-round.

E. ☐ There is a chance of fog tomorrow morning in Dallas.

3. This question has two parts. First, answer Part A. Then, answer Part B.

A student is researching weather and climate in different Texas cities. The student observes a weather report and also finds long-term climate data for Houston.

Student Observations

- **Weather Report**: Heavy rain and strong winds are expected tomorrow in Houston
- **Climate Data**: Houston has a humid subtropical climate, with warm temperatures and high humidity year-round.

Part A

Based on the student's observations, which statement best describes an aspect of climate rather than weather?

A. The temperature in Houston will be 85°F tomorrow.

B. Houston usually has warm temperatures and high humidity.

C. A cold front will bring thunderstorms this weekend.

D. The wind speed today is 20 mph.

Part B

Which statement BEST supports the answer to Part A?

A. Houston’s weather changes daily, depending on air pressure and temperature.

B. Scientists use at least 30 years of data to describe a city’s climate.

C. Weather forecasts can predict changes in temperature and precipitation for the next few days.

D. Meteorologists use satellites to track storms moving into Houston.

Name: _____ **Date**: _____

Read each question carefully. Choose the best answer to each question. For open-response questions, determine the best answer to the question.

1. The chart below shows the average temperature and precipitation for three Texas cities over the past 30 years.

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C. Weather forecasts can predict changes in temperature and precipitation for the next few days.

D. Meteorologists use satellites to track storms moving into Houston.

Name: _____ **Date**: _____

Read each question carefully. Choose the best answer to each question. For open-response questions, determine the best answer to the question.

1. The chart below shows the average temperature and precipitation for three Texas cities over the past 30 years. *Long term which means climate*

City	Average Summer Temperature	Annual Precipitation
Houston	92°F	50 inches
El Paso	95°F	9 inches
Dallas	94°F	37 inches

Based on the data, which conclusion is best supported?

A. The weather in these cities changes often throughout the year. *Weather*

B. El Paso usually receives much less rainfall than Houston. *"Usually" means long-term which tells us its climate*

C. Dallas had a cold front last week that caused lower temperatures. *Weather*

D. Houston had a thunderstorm yesterday, making it the rainiest city in Texas. *Weather*

Long term

2. Which **TWO** of the following statements describe climate rather than weather?

A. ☐ The high temperature in Houston today was 92°F. *"Today" is short-term which is **Weather***

B. ☐ The average winter temperature in El Paso is 50°F. *"Average winter temperature" is long-term which is **climate***

C. ☐ A hurricane is approaching the Texas coastline. *"A hurricane is approaching" is short-term which is **Weather***

D. ☐ The Texas Panhandle is known for dry and windy conditions year-round. *"Year-round" is long-term which is **climate***

E. ☐ There is a chance of fog tomorrow morning in Dallas. *"Tomorrow" is short-term which is **Weather***

3. This question has two parts. First, answer Part A. Then, answer Part B.

A student is researching weather and climate in different Texas cities. The student observes a weather report and also finds long-term climate data for Houston.

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Part A

Based on the student's observations, which statement best describes an aspect of climate rather than weather?

Long term

A. The temperature in Houston will be 85°F tomorrow. *"Tomorrow" is short-term which is **Weather***

B. Houston usually has warm temperatures and high humidity. *"Usually" is long-term which is **climate***

C. A cold front will bring thunderstorms this weekend. *"This weekend" is short-term which is **Weather***

D. The wind speed today is 20 mph. *"Today" is short-term which is **Weather***

Part B

Which statement BEST supports the answer to Part A?

Short-term = weather

A. Houston's weather changes daily, depending on air pressure and temperature.

Long term = climate

B. Scientists use at least 30 years of data to describe a city's climate.

C. Weather forecasts can predict changes in temperature and precipitation for the next few days. *Short-term = weather*

D. Meteorologists use satellites to track storms moving into Houston. *Short-term = weather*

***Climate** refers to **long-term** patterns in temperature and precipitation. The phrase "Houston usually has warm temperatures and high humidity" describes a long-term average, which is characteristic of climate, rather than daily or short-term weather changes.*