

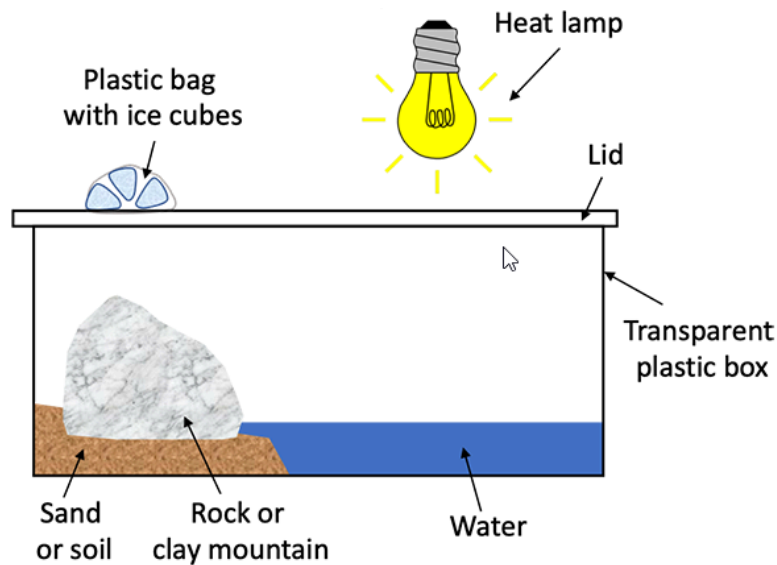
# Weather/Climate and The Water Cycle - SC.5.E.7.3

## Water Cycle Review

**Words to Know:** Fill in the table as you proceed through the lesson.

Word	Meaning	Draw a picture
Water cycle		
condensation		
evaporation		
precipitation		
water vapor		
runoff		
groundwater		
atmosphere		
transpiration		

## Think About This!! Modeling the Water Cycle



How can this model be used to demonstrate the water cycle? (Compare each aspect of the model to the water cycle on our planet. Ex: The heat lamp acts as the Sun.)

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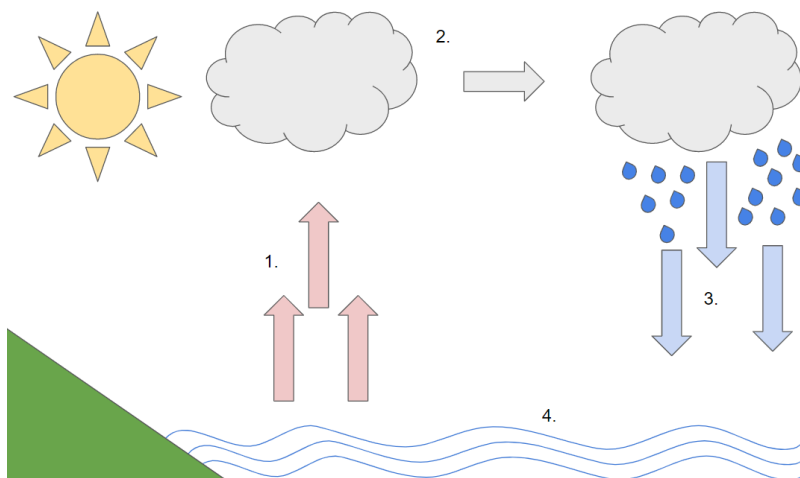


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Label the parts of the water cycle (1 - 4).



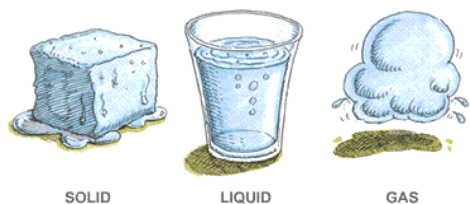
What does the word 'cycle' mean?

Describe why the water cycle is a cycle.

What powers the water cycle? \_\_\_\_\_

## Temperature can cause physical changes (Properties of Matter/Water)

I will be able to identify and explain the **states of matter** of **water** and how they change from one form to another (solid, liquid, and gas) as it applies to the water cycle.



Which 2 events happen because of increasing temperature?

1. \_\_\_\_\_
2. \_\_\_\_\_

Which 2 events happen because of decreasing temperature?

3. \_\_\_\_\_
4. \_\_\_\_\_

## Weather/Climate Review

### Reading passage: Weather

The layer of gases surrounding the planet Earth is called the Earth's **atmosphere**. The atmosphere is made up of different gases that act like a shield protecting life on Earth. The atmosphere also helps to maintain a safe temperature on Earth. Earth's atmosphere creates the closed system that cycles Earth's water and drives Earth's weather. As the Sun heats Earth's surface, the air above the surface heats up also, creating winds that help to move the water vapor in the air all around Earth.

Weather is identified as the conditions of the atmosphere at a specific time and place. Weather can change from day to day or even hour to hour. Look outside. Is it sunny or rainy? Is it stormy or windy? Is it hot or cold? What do you think the weather will be like in an hour? In a day?

How does the atmosphere drive the weather? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What is weather? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Some factors or conditions that make up weather are:

- Air \_\_\_\_\_
- \_\_\_\_\_ pressure
- Humidity
- \_\_\_\_\_ speed
- Wind \_\_\_\_\_
- Precipitation

## Reading passage: Air Temperature

**Temperature** is the measure of thermal energy (heat) in matter. When studying weather, we measure and record air temperature as a factor of weather. A thermometer is the instrument we use to measure the temperature of the air. Since air temperature affects the state of water, air temperature affects the type of precipitation that falls from the clouds. Air temperatures that are below freezing will produce solid precipitation in the form of snow, sleet, or hail. Air temperatures above freezing will produce liquid precipitation in the form of rain.

Air temperature changes with seasons, with elevation or altitude, and with geographic location. Places closer to large bodies of water or oceans have more stable temperatures. Air temperatures farther inland can vary from daytime to nighttime.

How does air temperature affect the type of precipitation that falls? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What instrument do scientists use to measure air temperature? \_\_\_\_\_

## Reading Passage - Humidity

**Humidity** is a measure of the amount of water vapor in the air.

- Humidity can be measured by a hygrometer.

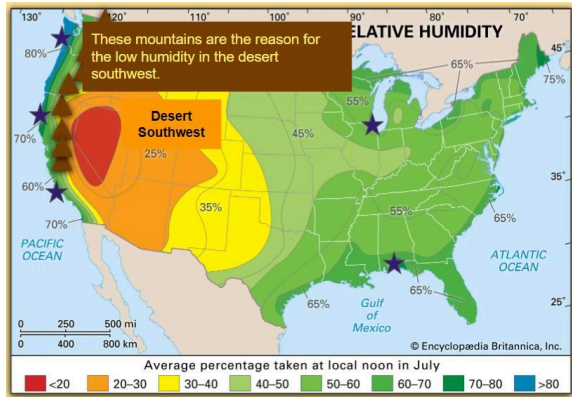
Air temperature can affect how much water vapor air will hold. Warmer air increases the rate of evaporation. Evaporation is the process that puts water vapor in the air. Warmer air can also hold much more water vapor than cooler air because there is more space between particles in warmer air. As evaporation over the Gulf of Mexico occurs, warm, humid air moves north and inland forming clouds that produce precipitation that falls as rain, especially during the summer.

Locations close to large bodies of water, like Pensacola and the Gulf of Mexico tend to have higher humidity than places farther inland, like Kansas.

What is humidity? \_\_\_\_\_  
\_\_\_\_\_

How does this water vapor form in the air? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Humidity Map of the United States



Locations close to large bodies of water, like Miami and cities along the Gulf of Mexico, and Chicago and cities around the Great Lakes tend to have higher humidity than places farther inland, like Kansas. Along the western coast of the USA, there is also high humidity. The desert southwest has low humidity. The mountains force the humid air up in altitude. The air cools and precipitation falls. Once the air is over the mountain, there is very little water vapor in the air.

When humidity is high in the atmosphere, it can make you feel hot and sticky. In places with high humidity, it may be difficult to feel comfortable when you are outside.

When humidity is high, there is so much water vapor in the air that there isn't much room for anything else. If you are sweating when it is humid, it is hard to cool off because your sweat is not evaporating into the air like it needs to cool your body. Especially during the summer months, Miami has high humidity. Humidity will also be high right before a rainstorm, or once the Sun has come out after a rainstorm.

When humidity is low, there is much less water vapor in the atmosphere. The air will feel dryer and the rate of evaporation will increase.

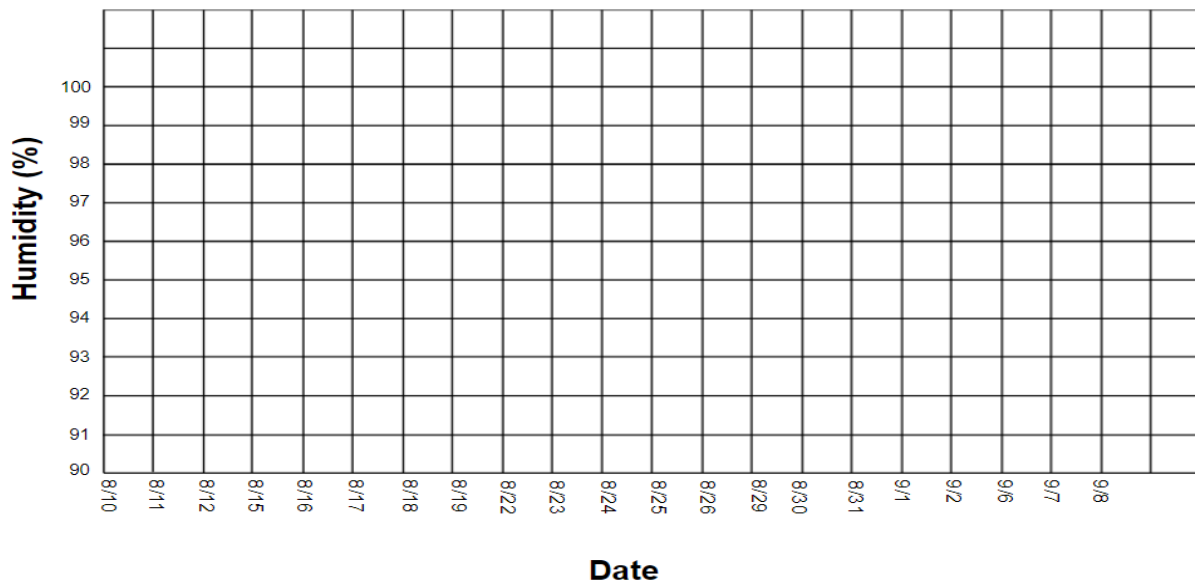
How does the atmosphere make you feel when there is high humidity? \_\_\_\_\_

How does high humidity affect the rate of evaporation? \_\_\_\_\_

How does low humidity affect the rate of evaporation? \_\_\_\_\_

## Analyze your Data - Graphing Humidity

Create a line graph using daily humidity values from your data collection.



Based on this data, what type of weather do you think occurred on August 25 and 26? \_\_\_\_\_

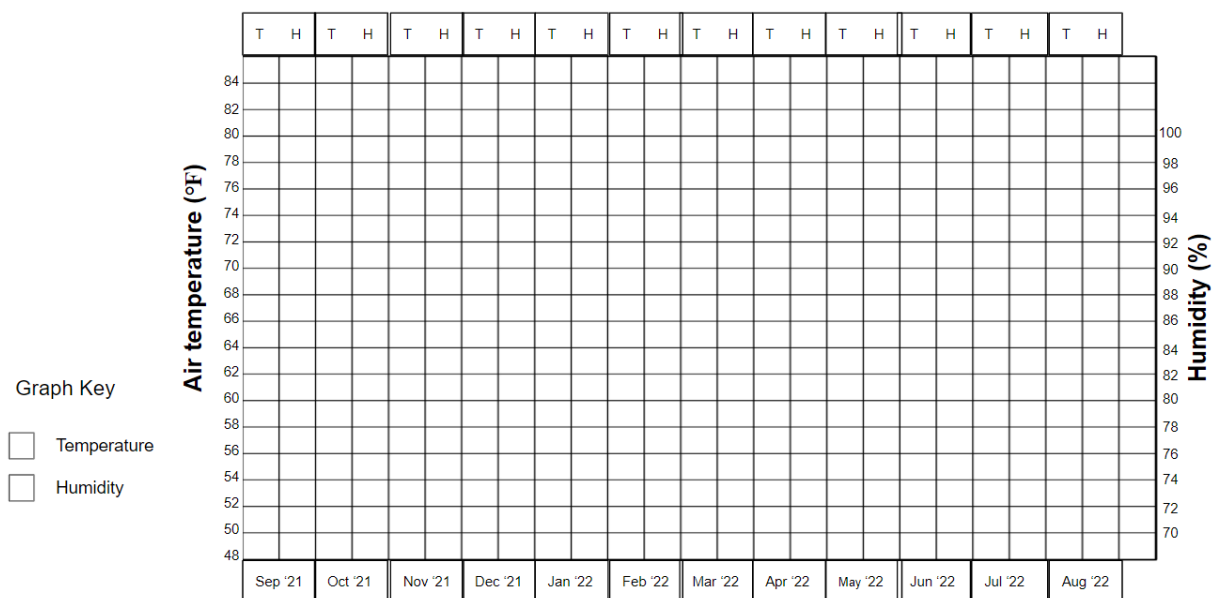
What was the humidity these days? \_\_\_\_\_

On what day was humidity the lowest during this period? \_\_\_\_\_

What was the humidity this day? \_\_\_\_\_

## Analyze your Data - Graphing Mean Monthly Temperature and Humidity

Create bar graphs using mean temperatures and humidity from the data provided. Be sure to use the appropriate scales at the left and right of the grid lines. Be sure to complete the graph key.



## Reading Passage - Comparing Air Temperature and Humidity

There is a relationship between air temperature and humidity.

Warmer air speeds up evaporation and holds more water vapor, adding more water vapor to the atmosphere. This increases the humidity in the air.

As air cools, water vapor condenses and falls out of the atmosphere as precipitation because of gravity. Cooler air holds less water vapor. This decreases the humidity of the air.

Describe the relationship between air temperature and humidity. \_\_\_\_\_

## Reading Passage - Air Pressure

The air around us is matter. It has mass and volume. Air makes up the atmosphere. Although the air particles are very small, gravity still pulls them toward Earth's surface.

### Demonstration - Air Has Mass

#### Hanger Balance with balloons

How does this demonstration help you to visualize the concept of air pressure?

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Air pressure is the force exerted by atmospheric air on Earth's surface as a result of gravity. Air pressure exerts the greatest force at sea level because there is more of the atmosphere above you to push down on you.

Air pressure is also called barometric pressure and it is measured using a barometer. The average air pressure at sea level is 29.92 inches of mercury. Pensacola is at sea level. Does the weather data you've been collecting, support air pressure at sea level?

What is air pressure? \_\_\_\_\_

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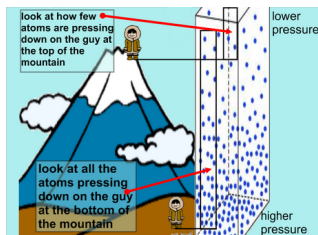
What force is responsible for air pressure? \_\_\_\_\_

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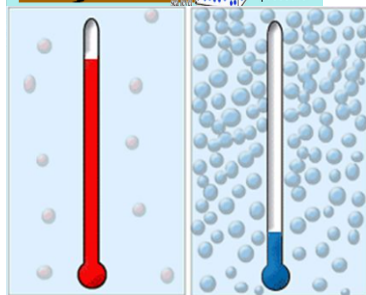
What instrument is used to measure air pressure? \_\_\_\_\_

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Different factors affect air pressure. These factors are listed below.

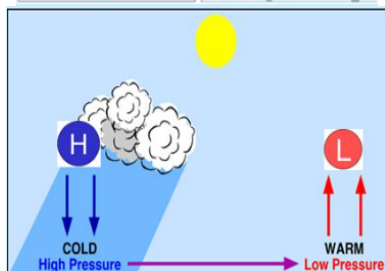


**Altitude:** Air pressure decreases as altitude increases. This is because more molecules of air are pulled closer to Earth's surface by gravity.



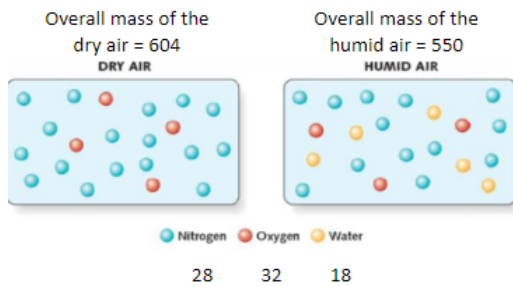
**Temperature:** Cold air sinks because it has more mass. The air particles are closer together. Cold air sinking will press down on Earth's surface with more force (air pressure). Cold air masses are referred to as **High Pressure** systems.

Warm air rises because it has less mass. The air particles are spread farther apart. Warm air rising will lift up from Earth's surface, exerting less downward force (air pressure). Warm air masses are referred to as **Low Pressure** systems.



**Water vapor (humidity):** Low humidity (drier air) has higher air pressure. High humidity (damp air) has lower air pressure. While this does not seem logical, water vapor is a relatively light molecule compared to other atmospheric gases. When there is more water

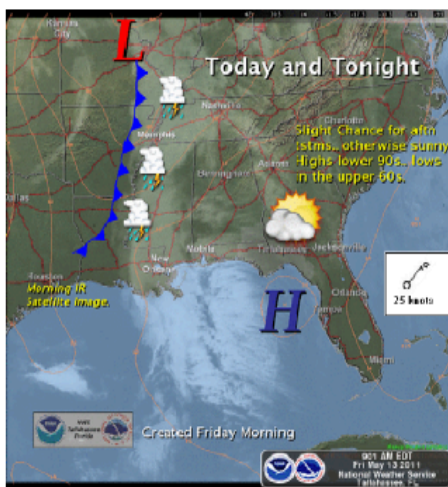
vapor in an air mass, then the overall mass of the air is lower. Think about it like comparing a shoe box filled with golf balls and marbles to an identical shoe box filled with a mixture of golf balls, marbles and styrofoam pellets.



What are the three factors that affect air pressure?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## Reading Passage: High and Low Air Pressure



	Partly Sunny
	Thunderstorms
	Low Pressure
	High Pressure
	A wind barb tells the wind speed

Air pressure also increases and decreases depending on weather conditions. **High** pressure is generally associated with **good** weather and clear skies. **Low** pressure is generally associated with deteriorating weather conditions and increased likelihood of **rain or storms**.

If an air mass with high pressure is over Florida, would you expect fair or poor weather conditions? Explain your answer.

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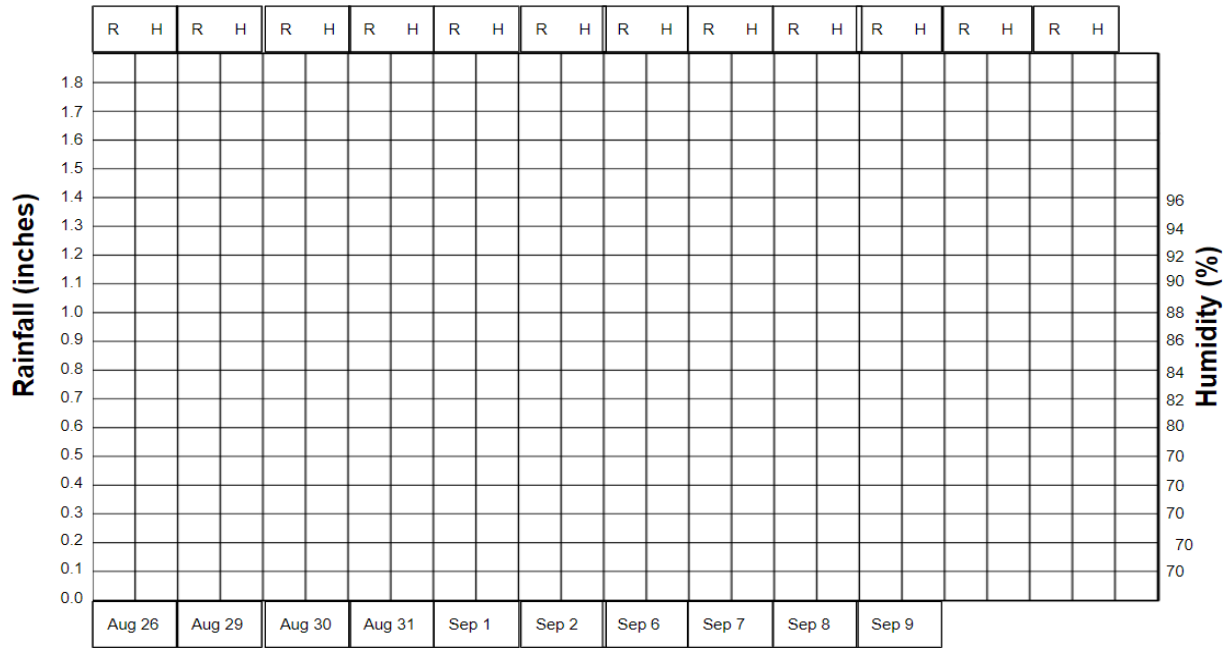
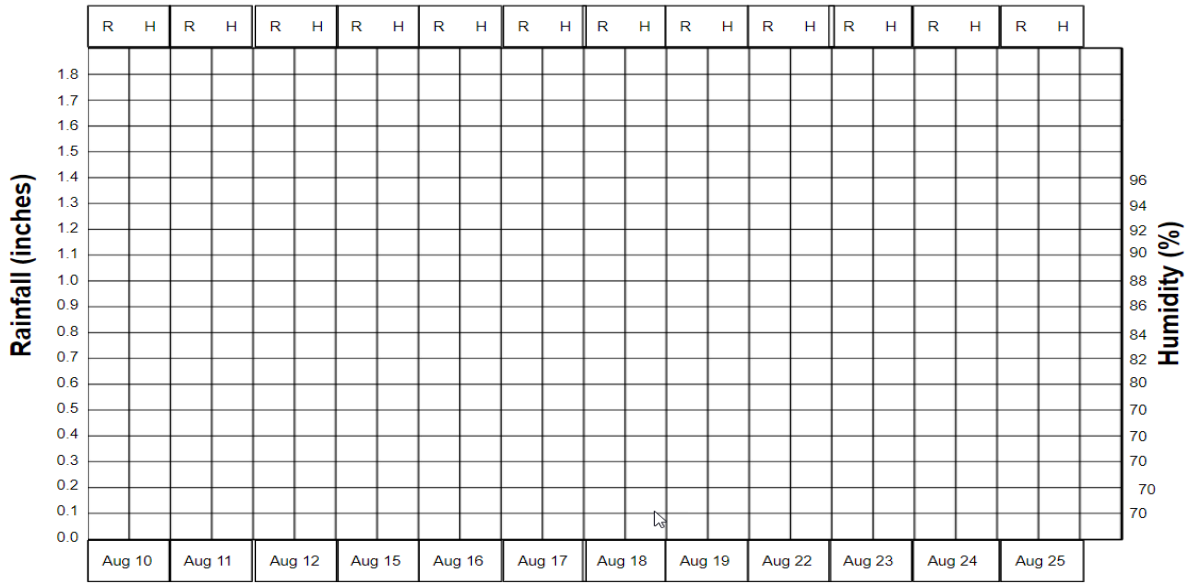
## Check What You Know

Description	High Pressure	Low Pressure
<b>L</b>		
<b>H</b>		
Cool Air		
Warm Air		
Air Sinks		
Air Rises		
Lighter Air		
Heavier Air		
Brings stormy weather		



Description	High Pressure	Low Pressure
Brings nice weather		
Forms sunny skies		
Forms clouds and rain		
Air particles are close together		
Air particles are far apart		

### Analyze your Data - Comparing Rainfall and Humidity



## Reading Passage - Wind

**Wind** is caused by air flowing from high pressure areas to low pressure areas. A difference between high and low pressure air masses causes wind. The greater the difference in air pressures, the stronger the wind will blow.

Some areas of the Earth receive more heat (thermal) energy from the Sun than other areas do. This will also result in the formation of wind. The greater the difference in temperatures, the stronger the winds that blow. Winds are usually lighter at night because the Sun is no longer present and the temperatures become cooler. There is less difference and therefore, less wind.

Wind vane



Anemometer



According to the text, what causes or produces wind?

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Wind **speed** is measured using an anemometer (MPH).

Wind vane (weather vane) measures **direction**.

What do scientists use to measure wind speed? \_\_\_\_\_

What do scientists use to measure wind direction? \_\_\_\_\_

## Activity: Online Tutorial: How's the Weather?

**Circle the correct temperature for the thermometer.**

### Practice 1

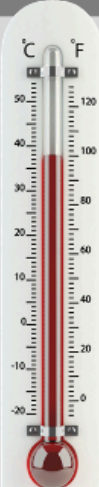
Read the thermometer on this page. Choose the correct degrees in **Celsius** and click on the box.

38° C

43° C

100° C

138° C



Place a check mark next to the statement or statements that are true.

Practice 2

Which statements are true about air pressure? Select all that apply.

Air pressure is greater at the top of a mountain than at the bottom.

A barometer is a tool used to measure air pressure.

Low pressure may result in thunderstorms.

High pressure may result in a blizzard.

Draw a line to match the weather vocabulary to its definition.

Practice 3

Match each term with the correct description.

Relative humidity is affected by this.

Water vapor enters our air through this process.

This is the amount of water vapor in our air.


This device is used to measure humidity.

Evaporation

Humidity

Hygrometer

Temperature



Practice 4		
Statements	True	False
Air moves from low pressure to high pressure.		
Wind vanes measure wind direction.		
Wind is air in motion.		
Differences in air temperature cause wind to blow.		
Anemometers measure wind direction.		
A wind sock measures only wind speed.		

**Write in the term next to the correct definition.**

Practice 5	
When water vapor gas changes directly to ice (solid).	
Snow melts and refreezes before hitting the ground.	
Liquid precipitation	
Rain drops freeze in the air over and over again as water freezes around it.	

**Place a check next to the correct location.**

**Practice 6**

Which location would be the BEST place to camp with a tent?

Temperature: 70°F Air Pressure: High Humidity: 60% Wind Speed: 10 mph Wind Direction: E Clear Sky	Temperature: 45°F Air Pressure: Low Humidity: 42% Wind Speed: 25 mph Wind Direction: NE Some Clouds
Temperature: 75°F Air Pressure: Low Humidity: 85% Wind Speed: 20 mph Wind Direction: W Full Cloud Cover	Temperature: 50°F Air Pressure: High Humidity: 40% Wind Speed: 15 mph Wind Direction: N Few Clouds

**Fill in the terms next to the descriptions.**

Term	Description
	An instrument that measures how much precipitation (rain, snow, or sleet) falls each day.
	An instrument that measures the speed or force of the wind.
	An instrument that measures temperature using a liquid that expands when it warms up.
	A tool showing the state of the weather over a large area.
	An instrument that measures wind direction.
	An instrument that measures air pressure.
	An instrument that measures the amount of moisture in the air.

	The measure of the force exerted on Earth by the atmosphere as a result of gravity.
	The measure of thermal energy (heat) in the atmosphere.
	The measure of the amount of moisture in the air.
	Water as a solid or liquid that falls to Earth as a result of gravity.
	Caused by uneven heating of Earth's surface or the difference between high and low air pressure systems.

Words	Definition
<b>Precipitation</b>	
<b>Rain gauge</b>	
<b>Rain</b>	
<b>Snow</b>	
<b>Hail</b>	
<b>Sleet</b>	
<b>Air temperature</b>	

## Forms of Precipitation Video

### Reading Passage - Rain

- Most common form of precipitation
- The temperature of the air is above 0°C (32°F) {freezing temperature of water} from the cloud all the way to the ground.
- Water is in its liquid form
- Rain mainly occurs during the spring and summer seasons all over the world.

Which state of matter is rain? \_\_\_\_\_

### Reading Passage - Snow

- The air temperature is below freezing (0°C / 32°F) {freezing temperature of water} from the cloud all the way to the ground.
- Since it is below freezing, the water drops as a solid
- Snow is normally associated with the winter season.

Which state of matter is snow? \_\_\_\_\_

## Reading Passage - Sleet

- For sleet to form, precipitation has to pass through a layer of air above freezing ( $0^{\circ}\text{C}$  /  $32^{\circ}\text{F}$ ) at higher altitudes and then through a layer of air just above the surface that is at below freezing temperatures.
- All precipitation starts as snow, but as it passes through warmer air, it changes from a solid to a liquid. Then, it passes through the freezing air just above Earth's surface and refreezes.
- Sleet forms very tiny pieces of ice as it hits the ground.
- Sleet is much like the ice in a slushy or a Slurpee.
- Sleet forms during the winter season or is associated with cold air mass systems.

Sleet is very similar to what kind of popular drink? \_\_\_\_\_

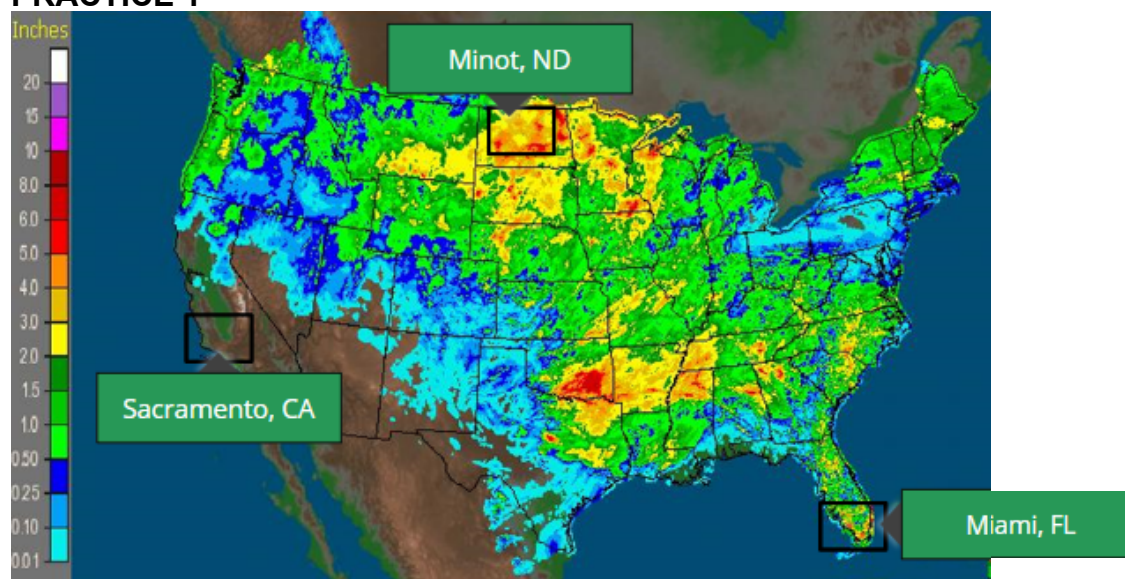
## Reading Passage - Hail

- Solid precipitation that is associated with severe thunderstorms
- The temperature of the air inside the tall cumulonimbus clouds is below  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ) {freezing temperature of water}.
- Since the temperatures inside the clouds are below freezing, the water droplets freeze and turn into tiny balls of ice.
- Wind inside the cloud blows the ice balls up and around within the clouds. Water droplets freeze to the surface of the ice balls.
- The tiny balls of ice grow larger and larger.
- Hail can grow to be the size of a golf ball or larger.

Hail can occur during what type of weather event? \_\_\_\_\_

## Activity: Online Tutorial - Raindrops Keep Falling on My Head

### PRACTICE 1



Least precipitation		Most precipitation

## PRACTICE 2

Choose the BEST explanation of how **sleet** forms in the atmosphere.

- ☐ Gusts of wind repeatedly push ice crystals into clouds where they combine with more ice crystals. As they grow they become too heavy to remain in the clouds and they fall to the Earth's surface.
- ☐ Water molecules collect to form heavy water droplets. When the water droplets become too heavy, they fall to the Earth's surface.
- ☐ Ice crystals fall from the atmosphere through a warmer layer of air and they melt. Before reaching the Earth's surface they refreeze into ice pellets.

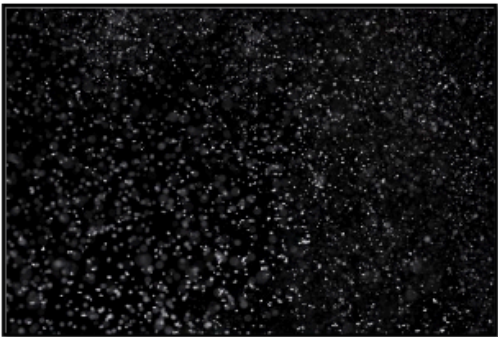
## PRACTICE 3

Choose the BEST explanation of how **hail** forms in the atmosphere.

- ☐ Updraft winds repeatedly push condensed water upward into the higher and colder levels of the where they form a solid and grow into hailstones. When they become too heavy to remain in the clouds, they fall to the Earth's surface.
- ☐ Water molecules collect to form heavy water droplets. When the water droplets become too heavy, they fall to the Earth's surface.
- ☐ Ice crystals fall from the atmosphere through a warmer layer of air and they melt. Before reaching the Earth's surface they refreeze into ice pellets.

## PRACTICE 4

Decide which picture best represents rain and which best represents snow.



Write in the terms below each picture that describe that picture.

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## PRACTICE 5

Decide which picture best represents sleet and which best represents hail.



Write in the terms below each picture that describe that picture.

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## PRACTICE 6

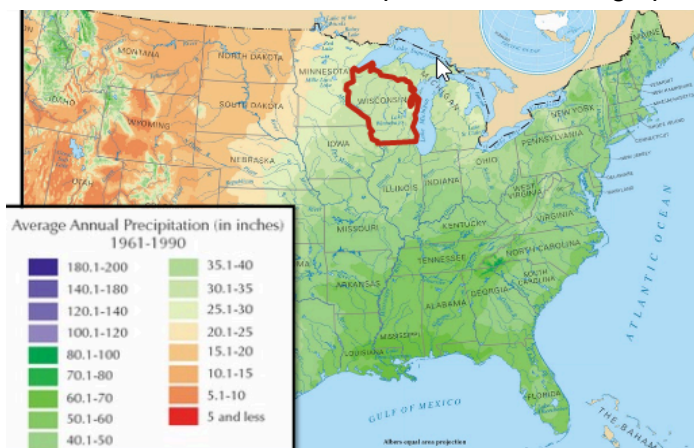
1. Using evidence from the tutorial, where does precipitation occur? \_\_\_\_\_  
\_\_\_\_\_

## PRACTICE 7

2. Using evidence from the tutorial, what is one major difference between hail and sleet?  
\_\_\_\_\_  
\_\_\_\_\_

## PRACTICE 8

Circle the correct answer to represent the average precipitation rate for Wisconsin.



Using the legend, select the average precipitation rate for the largest area in Wisconsin from the choices on the right side of the screen. Be sure to consider the color that is covering the **largest** area of the state.

INCHES

70.1 - 80

30.1 - 35

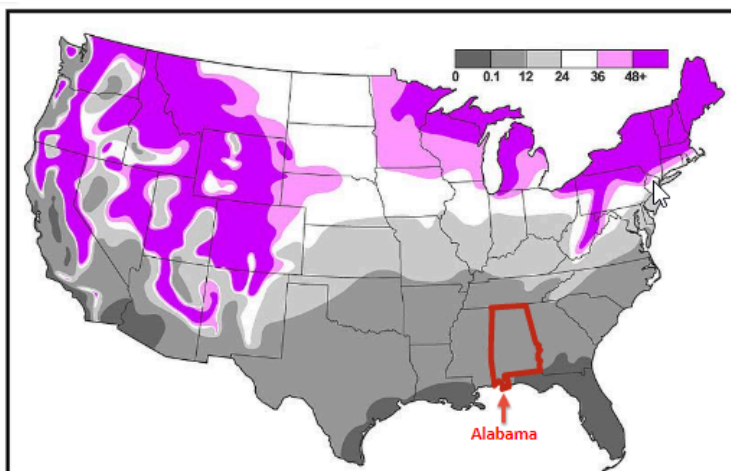
20.1 - 25

10.1 - 15



## PRACTICE 9

Circle the correct answer to represent average precipitation for Alabama..



Using the legend, select the average precipitation rate for the largest area in Alabama from the choices on the right side of the screen. Be sure to consider the color that is covering the **largest** area of the state.

INCHES

36 - 48

12 - 24

0.1 - 12

0 - 0.1

## PRACTICE 10

3. Using evidence from the tutorial, what is one major difference between rain and snow?

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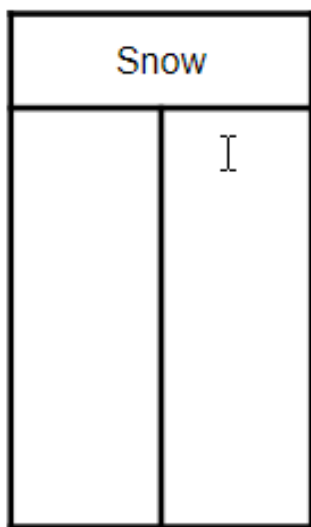
## PRACTICE 11

4. As explained in the tutorial, why would it not be very likely for Florida to experience high levels of snowfall? \_\_\_\_\_

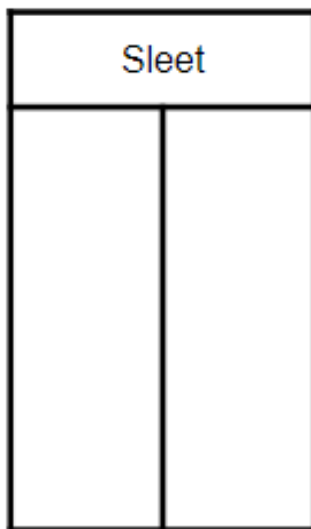
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## Activity: Types of Precipitation Diagram

Draw in the conditions that are needed for each form of precipitation to occur. **You do not need to draw Freezing Rain.**



← 0 °C →  
Temperature

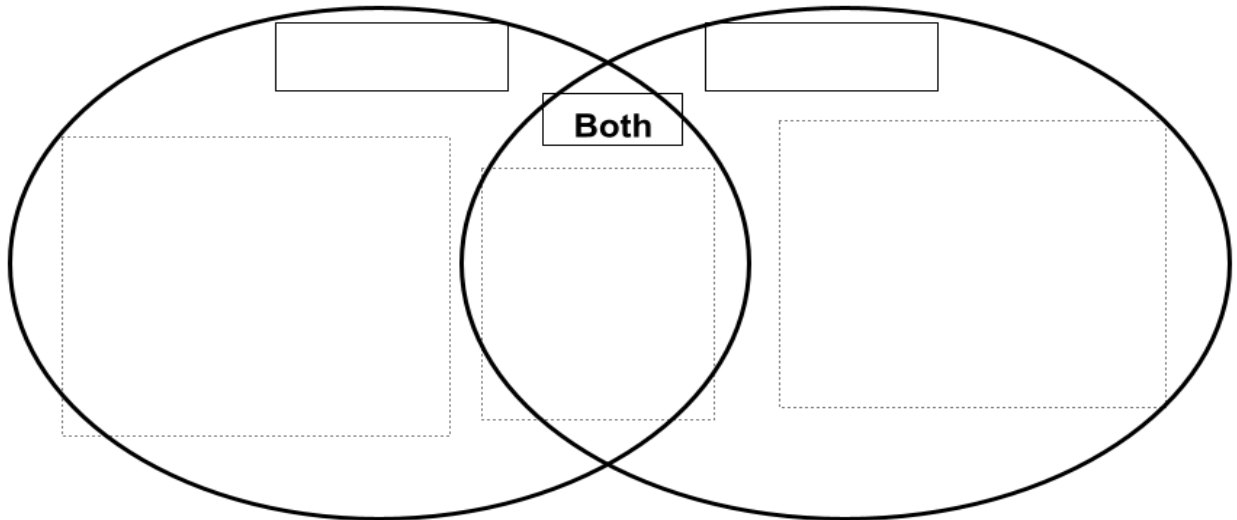


← 0 °C →  
Temperature



← 0 °C →  
Temperature

## Activity: Compare and contrast: Sleet and Hail



### Reading Passage: Types of Clouds

Clouds are identified by how far up they're found in the sky and the way that they look.

**Cirrus clouds** form very high in the sky. Generally, they are found at altitudes over 18,000 feet. They are wispy and light. They may look like feathers or like a pony's tail. Sometimes several cirrus clouds will be in a row. The clouds look like a thin line across the sky. Cirrus clouds indicate good weather.

**Stratus clouds** are closer to the Earth. They are usually found at about 7,000 feet. Stratus clouds are gray and flat. They all look like part of the same mass of cloud. They look like they blanket the sky. You can't really tell that the group is more than one cloud. Often, they cover the whole sky. Stratus clouds indicate rainy, or drizzly weather. How are stratus and cirrus clouds different? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Which of these clouds develops closer to the ground? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Nimbus** is a word used to describe clouds that means the clouds are capable of producing precipitation. Rain clouds form from cumulus clouds and stratus clouds.

**Cumulonimbus clouds** can grow quickly on warm summer days and are capable of producing strong winds, heavy rain, and possibly hail. Cumulonimbus clouds are also produced when cold air masses move across land and push warm, moist air up quickly.

**Nimbostratus clouds** are dark gray, featureless, mid-level clouds that are associated with long, steady precipitation. They appear flattened and spread out across most of the sky. They do not produce hazardous weather.

What does nimbus mean? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

How are nimbostratus clouds and cumulonimbus clouds different? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Cumulus clouds** are fluffy and thick. They travel at an altitude of about 7,000 feet but can stretch farther up. There may be a lot of blue sky in between the clouds. That's why they're perfect for spotting shapes. Cumulus clouds often occur with good weather.

**Cumulonimbus clouds** are thunderstorm clouds. These clouds can grow rapidly as warm, moist air rises. They grow into tall, towering clouds. Under the base of this cloud, it is very dark. All of the water molecules that have condensed to form it block the light from the Sun. Cumulonimbus clouds are capable of producing hail and possibly tornadoes.

Which cloud type grows vertically in the sky? (Which cloud can be tall?) \_\_\_\_\_

Which cloud type can be observed in the sky, but does not indicate that severe weather may occur soon? \_\_\_\_\_

### Activity: Cloud card sort

Cloud name	description	associated weather
Cirrus		
Stratus		
Cumulus		
Cumulonimbus		

### Check What You Know

- Emmanuel and Ares are outside during recess. A thunderstorm nears the school and small ice pellets start to fall from the sky. What type of precipitation is falling?
  - Snow
  - Rain
  - Hail
  - Sleet
- When Lucy got out of school, it was raining. ON the trip home, the rain turned to sleet. What is the most likely reason for the change?
  - The rain began to fall through a very cold layer of air.
  - The raindrops got so heavy they began to freeze.
  - The trip home took Lucy to a high elevation.
  - The air pressure decreased.

**Practice: Identify the statements as Weather or Climate.**

Description	Weather	Climate
Today's temperature is 77°F or 25°C.		
The amount of rain that fell yesterday was 0.2 inches or 0.5 cm.		
The average temperature in December is 73°F or 23°C.		
Today's winds are from the SW at 15 mph.		
The rainfall total for Miami for 2014 is 61.9 inches or 157 cm.		
Florida's rainy season is during the summer months.		

**Practice: Write in the term that correctly identifies the description.**

Word bank: Temperate rainforest    Swamp    Everglades    Tropical Rainforest

Description	Environment
Long, wet winter and shorter, drier summer.	
Region covered by water, but not totally land or totally water	
Large wetland area in south Florida with hot summers and mild winters	
Warmer temperatures, high humidity and annual rainfall between 203 and 1,016 cm (80-400 inches)	

**Practice: Write in the term that correctly identifies the description.**

Word bank:    Hot desert climate    Mountain climate    cold desert climate

Description	Environment
Hot summers and light rainfall in the winter. Very low humidity and dry conditions.	
Temperature, air pressure and humidity decrease as altitude increases. Precipitation increases with altitude.	
Short, moist, moderately warm summers and cold, long winters. Very low humidity and dry conditions.	

**Practice: Select the answer that best completes this sentence.**

The weather during the summer in the tundra region can be described as \_\_\_\_\_.

- \_\_\_\_\_ warm (70°F) and dry
- \_\_\_\_\_ warm (70°F) and humid
- \_\_\_\_\_ cool (50°F) and dry
- \_\_\_\_\_ cool (50°F) and humid

**Practice: Identify the climate for each description.**

Description	Swamp	Desert
Humid and moist		
Low humidity		
Very little rain		
About 132 cm of rainfall per year (Everglades)		
Very dry		
Marshy, boggy region		

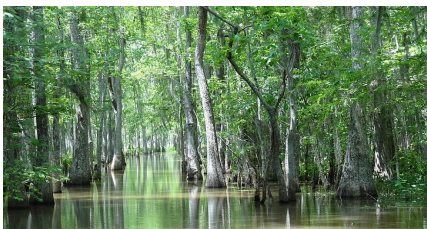
**Practice: Identify the climate for each description.**

Description	Tundra	Tropical Rainforest
High humidity		
Low humidity		
High average rainfall		
Low average rainfall		
Cool summer temperatures		
Warm average temperatures		

**Check What You Know**

1. Kyle and Steve were arguing over what environment has more humidity. Kyle states that the desert has the most humidity, while Steve is convinced that the rainforest has more. What statement do you agree with the **most**?
  - a. Kyle is correct, because the desert is so hot during the day.
  - b. Kyle is correct, because there are many clouds that cover the desert.
  - c. Steve is correct, because there are high temperatures and large amounts of rainfall each year.
  - d. Steve is correct, because there are so many trees in the rainforest.

2. Swampy areas like the one shown below can be found in many Florida locations. What weather conditions are most frequently found in this environment?



- A. High temperature, high humidity
- B. High temperature, low humidity
- C. Low temperature, high humidity
- D. Low temperature, low humidity

3. Parts of the Amazon basin are warm and humid. The trees are so thick that little light reaches the ground. Parts of Arizona are very dry and hot. There are few plants that are able to survive. Which types of environments are these?

- a. desert and mountain
- b. mountain and rainforest
- c. plain and mountain
- d. rainforest and desert

## Think About This!!: Does the Ocean Influence Our Weather and Climate?

Four Friends were talking about the ocean. They each had different ideas about how the ocean influences conditions on Earth. This is what they said:

Justin: The ocean has a major influence on climate, but I don't think it has much of an effect on the weather.

Bruce: The ocean has a major influence on weather, but I don't think it has much of an effect on the climate.

Maya: I disagree with both of you. The ocean has a major influence on both weather and climate.

Para: I disagree with all of you. The ocean does not have a major influence on weather and climate. It's just part of the water cycle.

Who do you agree with the most? Explain your answer. \_\_\_\_\_

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## Activity: Video: Climate for Kids

Climate is any area's normal weather pattern over a long period of \_\_\_\_\_.

What are the 4 main climates in our world?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

## Reading Passage:

**Bodies Of Water:** Any large amount of **water** on a planet's surface.

- Oceans, lakes, ponds, streams and other large bodies of water create milder, temperate climates. In the summer, when the water temperature is cooler than the air temperature, the wind that blows above the water will be cooler. As those winds blow inland, they help to cool the land. During the winter, when the water temperature is warmer than the air temperature, the winds that blow hold onto some of the heat and warm the land, keeping temperatures warmer.
- In general, larger bodies of water produce the most dramatic effects on the surrounding regional climate.

How do large bodies of water affect climate? \_\_\_\_\_

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Of latitude, elevation and oceans, which has the most effect on regional climate?

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## Multiple Choice

City A and City B are both within the Temperate climate zone. City A averages 25 inches of precipitation per year. City B averages 43 inches. Which of these factors could account for the greater precipitation at City B?

- |                      |                         |
|----------------------|-------------------------|
| a. more trees        | b. fewer animals        |
| c. greater elevation | d. nearness to an ocean |