Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Dew Point | the temperature at which air is saturated |
| Evaporation | when a water molecule gets warm enough to become water vapor and rise into the air |
| Condensation | When a gas changes into a liquid (like water vapor into a water drop in a cloud) |
| Humidity | the amount of water vapor in the air |
| Precipitation | water falling from the sky as rain, sleet, snow or hail |
| Relative Humidity | the percentage of water vapor in the air at a certain temperature |
| Water vapor | water in the gas form – or - moisture in the air |
| Weather | the condition of the atmosphere at a certain time and place |

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Weather Precipitation Dew Point Water vapor

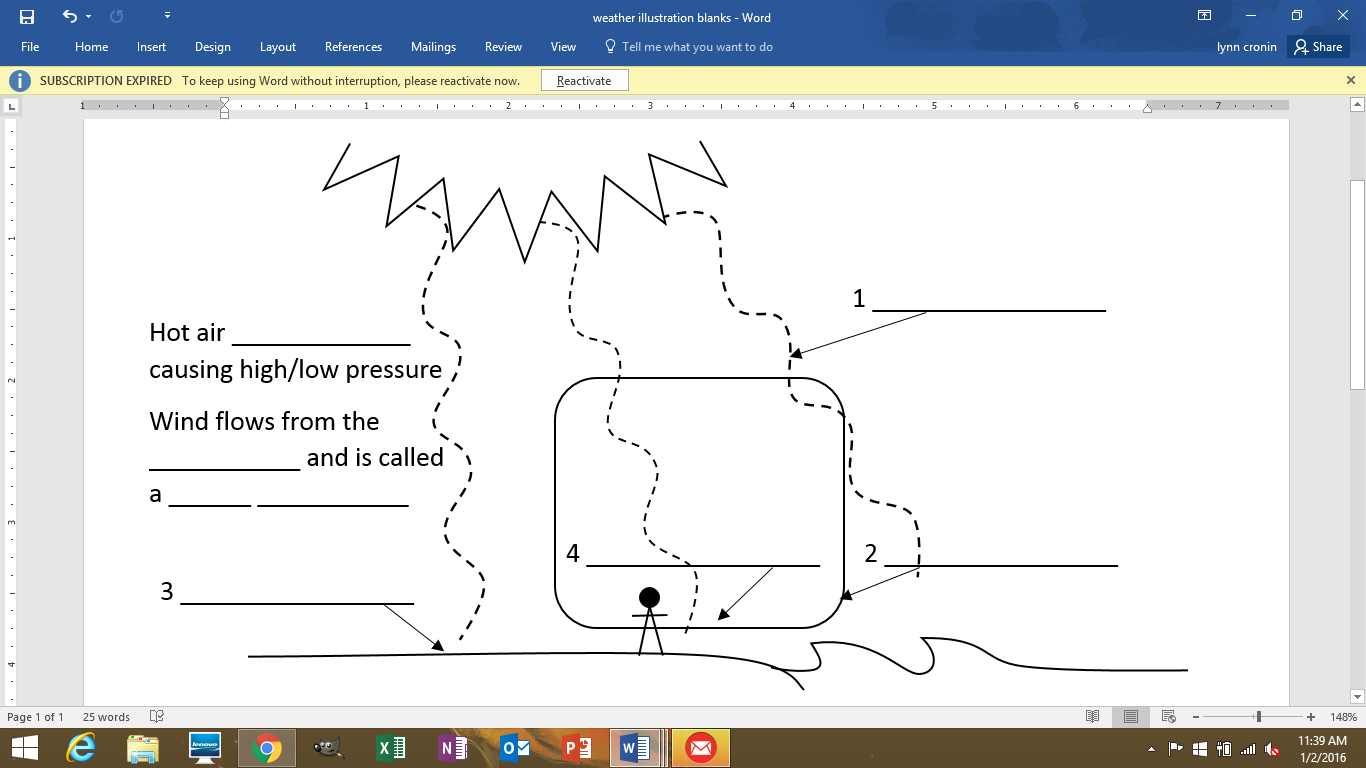
Evaporation Humidity Relative humidity Condensation

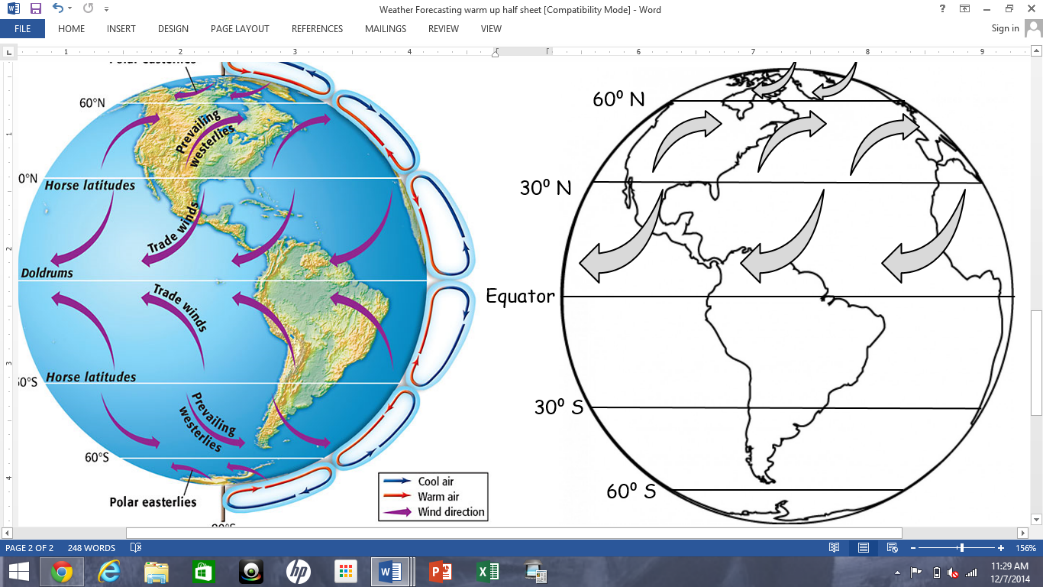
|  |  |  |  |
| --- | --- | --- | --- |
|  | |  | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the amount of water vapor in the air | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | water falling from the sky as rain, sleet, snow or hail | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the percentage of water vapor in the air at a certain temperature | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | water in the gas form – or - moisture in the air | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | when a water molecule gets warm enough to become water vapor and rise into the air | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the temperature at which air is saturated | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the condition of the atmosphere at a certain time and place | |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | When a gas changes into a liquid (like water vapor into a water drop in a cloud) | |

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Label this illustration:**

Wind, conduction, convection, radiation – draw arrows on the convection cell – draw the person’s hair – finish the paragraph



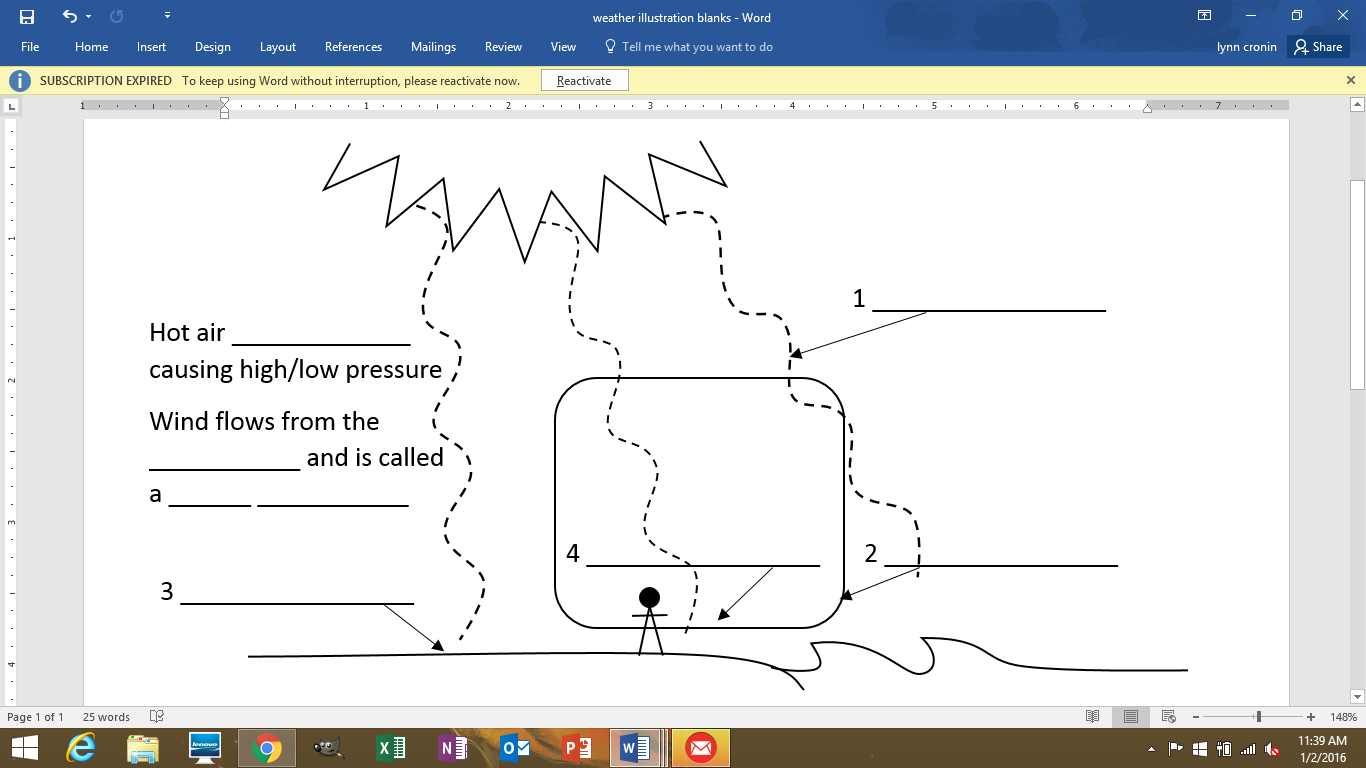


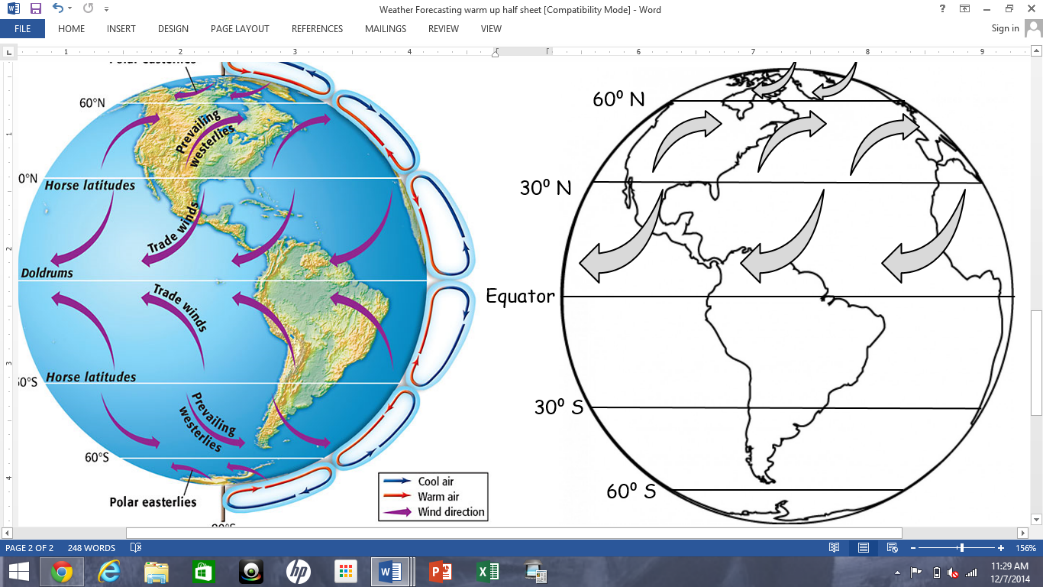
1. Draw a star on the trade winds
2. Circle the line at the doldrums
3. Draw an arrow pointing to the   
   horse latitudes
4. Draw the North American   
   Jet Stream where we   
   would expect it to be.
5. Draw the convection belt   
   between the equator & 30° S

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Label this illustration:**

Wind, conduction, convection, radiation – draw arrows on the convection cell – draw the person’s hair – finish the paragraph



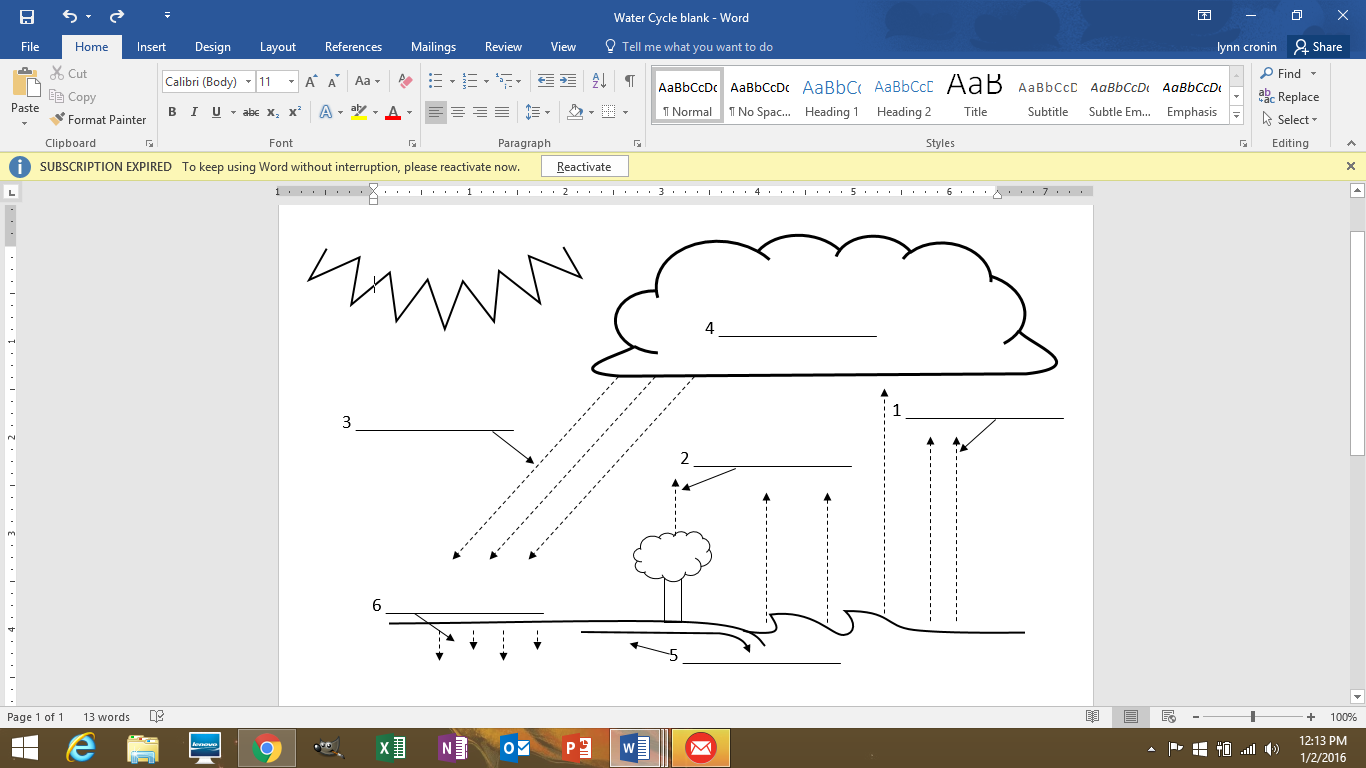


1. Draw a star on the trade winds
2. Circle the line at the doldrums
3. Draw an arrow pointing to the   
   horse latitudes
4. Draw the North American   
   Jet Stream where we   
   would expect it to be.
5. Draw the convection belt   
   between the equator & 30° S

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Label this illustration:**

Condensation evaporation precipitation  
runoff transpiration filtration



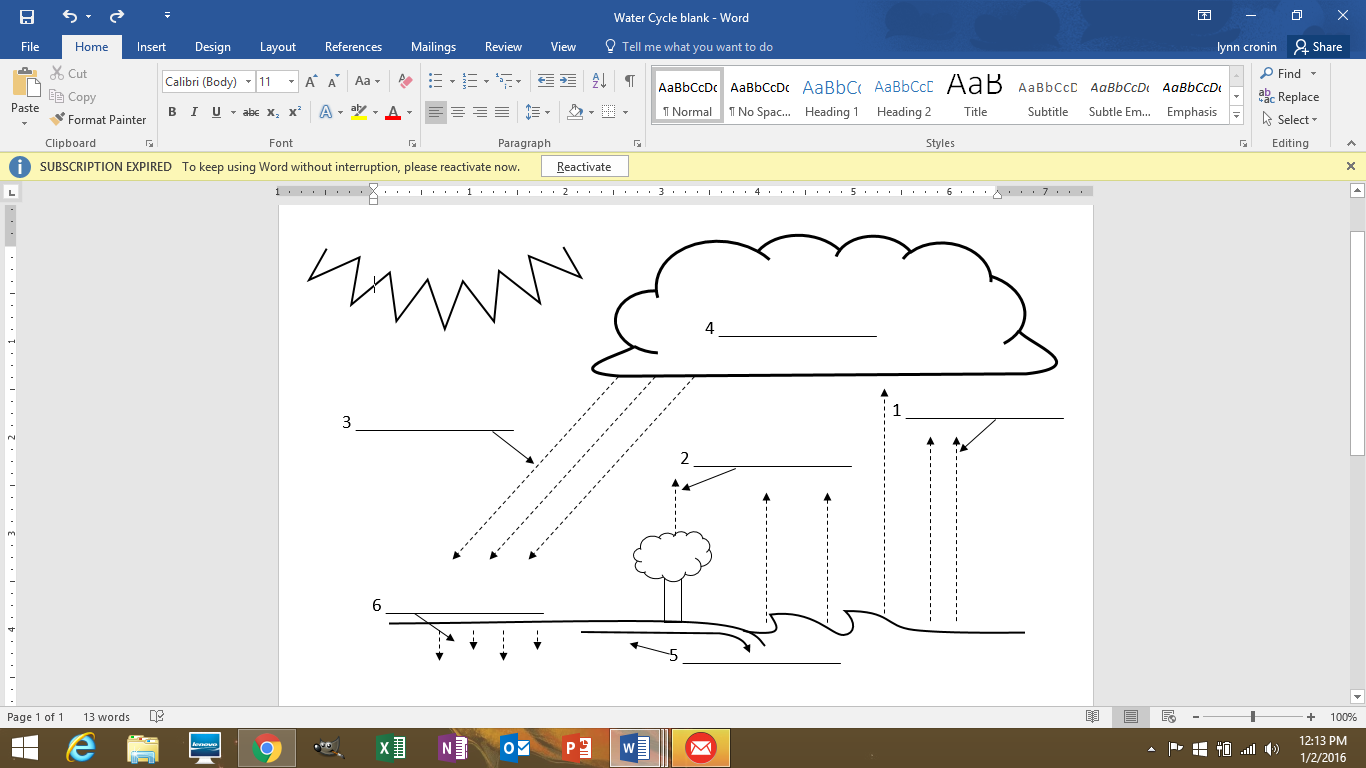
Humidity is the amount of water in the air. Warm air has molecules that are very spread out – so lots of water can fit inside of it. As air cools down the water no longer fits in the air – so it begins to condense into water droplets. When those water droplets get large enough they fall as precipitation.

1. Which type of air holds the most water? (hot or cold) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Clouds are made up of water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Clouds are caused by condensation when the air gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (colder or warmer)
4. Use the illustration above to list the processes that raise humidity. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Label this illustration:**

Condensation evaporation precipitation  
runoff transpiration filtration



Humidity is the amount of water in the air. Warm air has molecules that are very spread out – so lots of water can fit inside of it. As air cools down the water no longer fits in the air – so it begins to condense into water droplets. When those water droplets get large enough they fall as precipitation.

1. Which type of air holds the most water? (hot or cold) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Clouds are made up of water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Clouds are caused by condensation when the air gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (colder or warmer)
4. Use the illustration above to list the processes that raise humidity. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Put it all together…**

**What we already know about weather**

* We know that Biomes are large areas with similar temperature, wind and precipitation. Weather is **local** temperature, wind and precipitation that occurs on a specific day. Weather occurs in biomes, but when we talk about the weather we really don’t care if it is snowing in another part of our biome – we only care about what is happening here.
* We know that temperature is determined by how much sunlight hits earth’s surface and that wind is caused by convection cells when the warm ground warms the air through conduction.
* And we know that precipitation is because there is always water vapor in the air – and that the water vapor clumps together as raindrops when it gets too cold in the upper troposphere.

So when you think about it some of the weather that we see makes a lot of sense. Once you get wind blowing anywhere you will cause winds in other places. When the wind is blowing it is changing the temperatures of the land and air around it.

And once you change the temperature of air you change how much water it can hold – if you make the air colder the water in it will condense into drops and eventually fall as precipitation.

1. Biomes describe an area by temp., wind and precipitation. How is weather different?

1. What are the three ways that things on earth get warm? (hint: convection is one)
2. Precipitation is connected with temperature. Water stays in the air until the air gets\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(colder, hotter)
3. Once you change the temperature of air you change how much

**Put it all together…**

**What we already know about weather**

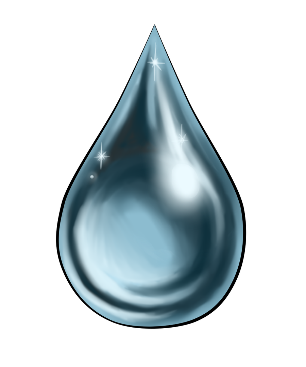
* We know that Biomes are large areas with similar temperature, wind and precipitation. Weather is **local** temperature, wind and precipitation that occurs on a specific day. Weather occurs in biomes, but when we talk about the weather we really don’t care if it is snowing in another part of our biome – we only care about what is happening here.
* We know that temperature is determined by how much sunlight hits earth’s surface and that wind is caused by convection cells when the warm ground warms the air through conduction.
* And we know that precipitation is because there is always water vapor in the air – and that the water vapor clumps together as raindrops when it gets too cold in the upper troposphere.

So when you think about it some of the weather that we see makes a lot of sense. Once you get wind blowing anywhere you will cause winds in other places. When the wind is blowing it is changing the temperatures of the land and air around it.

And once you change the temperature of air you change how much water it can hold – if you make the air colder the water in it will condense into drops and eventually fall as precipitation.

1. Biomes describe an area by temp., wind and precipitation. How is weather different?

1. What are the three ways that things on earth get warm? (hint: convection is one)
2. Precipitation is connected with temperature. Water stays in the air until the air gets\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(colder, hotter)
3. Once you change the temperature of air you change how much

**Humidity**

Water vapor is always in the air around us, but the amount of water vapor in the air is really important to weather patterns.

When air is warm it can hold a whole lot of water vapor, but when the air cools down it can’t hold as much water and that water vapor begins to condense into raindrops. That’s why, on a hot summer day, we get thunderstorms. The very wet hot air rises until it cools down and the water condenses. Because the air was hot it had a lot of water in it so when it cools and condenses the rain is heavy.

We call the amount of water in the air humidity.

Humidity depends upon two things – the amount of water available and the temperature of the air.

Air that is as full of water as it can get is called saturated air. Warm air is saturated when it contains huge amounts of water. Cool air is saturated when it has only a small amount of water in it. Either way – air that is saturated will cause clouds and eventually precipitation - if the temperature drops even a little bit.

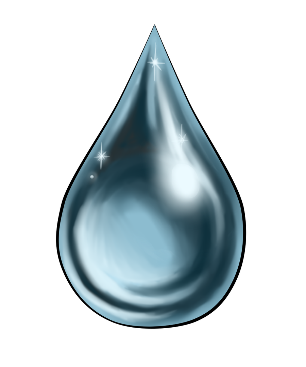
Relative humidity has to do with the amount of water air can hold at a specific temperature.

Huh?

If a sponge can hold 1 cup of water at 70 degrees then it is saturated if is actually has 1 cup of water in it (at 70 degrees). Saturated air has 100% humidity.

But if that same sponge (at 70 degrees) only has ½ a cup of water in it then that would have 50% humidity.

1. Warm air can hold a whole lot of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but cool air can’t hold as much.
2. Humidity depends upon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Humidity**

Water vapor is always in the air around us, but the amount of water vapor in the air is really important to weather patterns.

When air is warm it can hold a whole lot of water vapor, but when the air cools down it can’t hold as much water and that water vapor begins to condense into raindrops. That’s why, on a hot summer day, we get thunderstorms. The very wet hot air rises until it cools down and the water condenses. Because the air was hot it had a lot of water in it so when it cools and condenses the rain is heavy.

We call the amount of water in the air humidity.

Humidity depends upon two things – the amount of water available and the temperature of the air.

Air that is as full of water as it can get is called saturated air. Warm air is saturated when it contains huge amounts of water. Cool air is saturated when it has only a small amount of water in it. Either way – air that is saturated will cause clouds and eventually precipitation - if the temperature drops even a little bit.

Relative humidity has to do with the amount of water air can hold at a specific temperature.

Huh?

If a sponge can hold 1 cup of water at 70 degrees then it is saturated if is actually has 1 cup of water in it (at 70 degrees). Saturated air has 100% humidity.

But if that same sponge (at 70 degrees) only has ½ a cup of water in it then that would have 50% humidity.

1. Warm air can hold a whole lot of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but cool air can’t hold as much.
2. Humidity depends upon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Rain Fog Sleet Cumulus Snow  
Stratus Hail Cumulonimbus Cirrus

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | puffy white clouds with flat bottoms – bring fair weather until they turn dark |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | layered clouds that cover a large area |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Thin, feathery clouds high in the atmosphere |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | a cloud that forms near the ground |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | dark cumulus clouds that cause thunderstorms |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the most common form of precipitation |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | frozen rain |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | precipitation that is made of balls of ice |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | water vapor that changes directly into a solid without becoming liquid |

Name that cloud



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

Rain Fog Sleet Cumulus Snow  
Stratus Hail Cumulonimbus Cirrus

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | puffy white clouds with flat bottoms – bring fair weather until they turn dark |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | layered clouds that cover a large area |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Thin, feathery clouds high in the atmosphere |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | a cloud that forms near the ground |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | dark cumulus clouds that cause thunderstorms |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | the most common form of precipitation |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | frozen rain |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | precipitation that is made of balls of ice |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | water vapor that changes directly into a solid without becoming liquid |

Name that cloud



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



Label: stratus, cumulonimbus, cirrus and cumulus



Label: stratus, cumulonimbus, cirrus and cumulus