

NAME: \_\_\_\_\_

## Unit 4 - Weather Vocabulary

1. Weather- \_\_\_\_\_
  2. Climate- \_\_\_\_\_
  3. Temperature- \_\_\_\_\_
  4. Hydrosphere- \_\_\_\_\_
  5. Atmosphere- \_\_\_\_\_
  6. Ozone Layer- \_\_\_\_\_
  7. Troposphere- \_\_\_\_\_
  8. Greenhouse Effect- \_\_\_\_\_
  9. Air Pressure- \_\_\_\_\_
  10. Relative Humidity- \_\_\_\_\_
  11. Dew Point- \_\_\_\_\_
  12. Jet Stream- \_\_\_\_\_
  13. Continental Polar- \_\_\_\_\_
  14. Continental Tropical- \_\_\_\_\_
  15. Maritime Polar- \_\_\_\_\_
  16. Evaporation- \_\_\_\_\_
  17. Condensation- \_\_\_\_\_
  18. Sublimation- \_\_\_\_\_
  19. Melting- \_\_\_\_\_
  20. Freezing- \_\_\_\_\_
  21. Precipitation- \_\_\_\_\_
  22. Water Cycle- \_\_\_\_\_
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NAME: \_\_\_\_\_

23. Air Mass- \_\_\_\_\_

24. Front- \_\_\_\_\_

25. Warm Front- \_\_\_\_\_

26. Cold Front- \_\_\_\_\_

27. Stationary Front- \_\_\_\_\_

28. Weather Map- \_\_\_\_\_

29. Wind- \_\_\_\_\_

30. Coriolis Effect- \_\_\_\_\_

31. Radiation- \_\_\_\_\_

32. Convection- \_\_\_\_\_

33. Conduction- \_\_\_\_\_

34. Thermometer- \_\_\_\_\_

35. Barometer- \_\_\_\_\_

36. Anemometer- \_\_\_\_\_

37. Wind Vane- \_\_\_\_\_

38. Psychrometer- \_\_\_\_\_

39. Isobar- \_\_\_\_\_

40. Station Model- \_\_\_\_\_

41. Tornado- \_\_\_\_\_

42. Hurricane- \_\_\_\_\_

43. Isotherm- \_\_\_\_\_

44. Global Warming- \_\_\_\_\_

NAME: \_\_\_\_\_

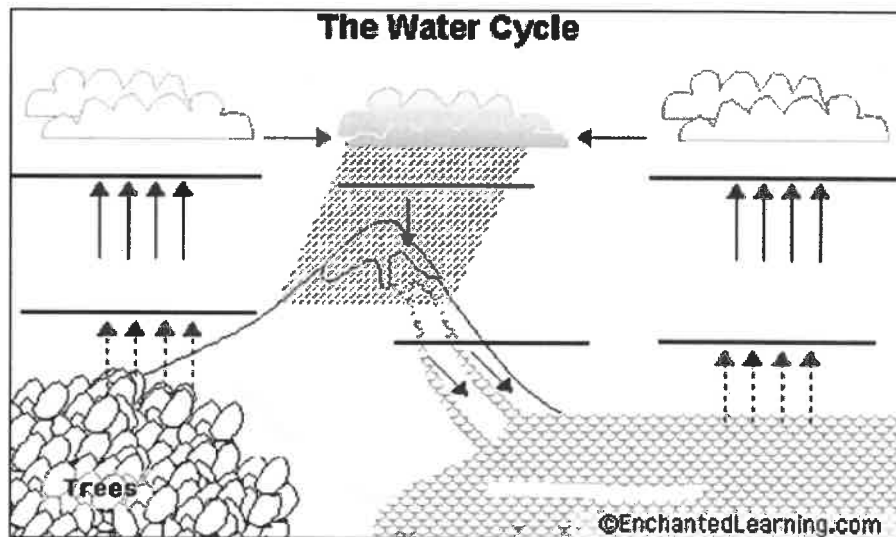
## Weather – Unit 4 Notes

**Weather –** \_\_\_\_\_

The study of \_\_\_\_\_ is called \_\_\_\_\_

Weather is caused by: \_\_\_\_\_

The Water Cycle



**Evaporation**

“Water (\_\_\_\_\_) turns into water vapor (\_\_\_\_\_)”

**Condensation-**

**THIS IS WHY WE GET**

**!!**

NAME: \_\_\_\_\_

**Precipitation**

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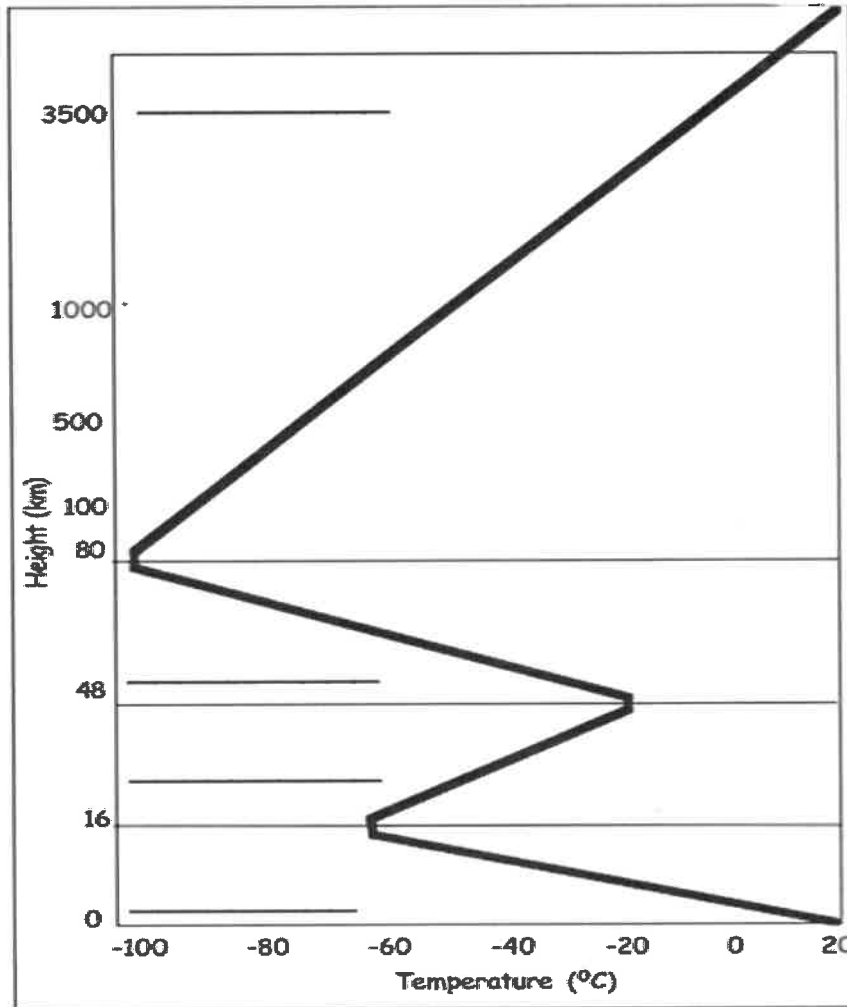
rain, hail, sleet or snow.

What is the atmosphere?

Atmosphere - \_\_\_\_\_

Weather Balloon To Space (video)

**Layers of the Atmosphere**



NAME: \_\_\_\_\_

**Troposphere**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Stratosphere**

- \_\_\_\_\_
  - \_\_\_\_\_
- \* \_\_\_\_\_
  - \* \_\_\_\_\_

**Mesosphere**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Thermosphere**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**The Atmosphere**

As you **increase** your \_\_\_\_\_ **AIR PRESSURE** \_\_\_\_\_  
(Height off the ground)

**AIR TEMPERATURE DECREASES** in the \_\_\_\_\_

**Air Pressure** – the amount of \_\_\_\_\_  
down on you.

**Temperature** – the \_\_\_\_\_ in the atmosphere

**HEAT TRANSFER**

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NAME: \_\_\_\_\_

**CONDUCTION** – \_\_\_\_\_

\_\_\_\_\_

**CONVECTION** – \_\_\_\_\_

**RADIATION** – \_\_\_\_\_

### What is Wind?

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

**Global Wind:**

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

**Ex.**

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

**Local Winds:**

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

**Ex. Land Breezes and Sea Breezes (Draw Below)**

## **FORECASTING AND WEATHER INSTRUMENTS**

NAME: \_\_\_\_\_

**What do meteorologists observe to forecast the weather?**

**Air Pressure** - \_\_\_\_\_

**Barometer** - \_\_\_\_\_

\_\_\_\_\_ - stormy weather

\_\_\_\_\_ - clear skies

**Humidity** - \_\_\_\_\_

**Dew Point** - \_\_\_\_\_

**Sling Psychrometer** - \_\_\_\_\_

(or Wet/Dry Bulb Thermometer)

**Temperature** - \_\_\_\_\_

**Thermometer** - \_\_\_\_\_

**Wind Speed** - \_\_\_\_\_

**Anemometer**- \_\_\_\_\_

**Wind Direction:** \_\_\_\_\_

**Wind Vane / Wind Sock:** \_\_\_\_\_





Name: \_\_\_\_\_ pd. \_\_\_\_\_ date: \_\_\_\_\_

## Weather Packet – Part 2

**MEMORIZE THIS: Clouds form when warm air rises, expands and cools below its dewpoint temp. That is why clouds are usually so high in the sky.**

**Condensation Nuclei-** \_\_\_\_\_

### 3 Types of Clouds

#### Cumulus Clouds

- \_\_\_\_\_
- \_\_\_\_\_
- When they get very large (cumulonimbus)–thunderstorms can occur



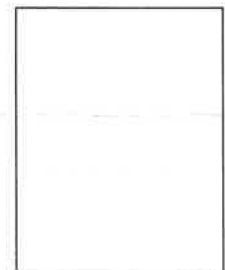
#### Stratus Clouds

- \_\_\_\_\_
- Often caused by gentle lifting of large body of air into the atmosphere.
- \_\_\_\_\_



#### Cirrus Clouds

- \_\_\_\_\_  
(made of ice crystals).
- \_\_\_\_\_
- Storm clouds - Often have 'nimbo' or 'nimbus' as part of their names. Nimbus = RAIN



Ex: \_\_\_\_\_

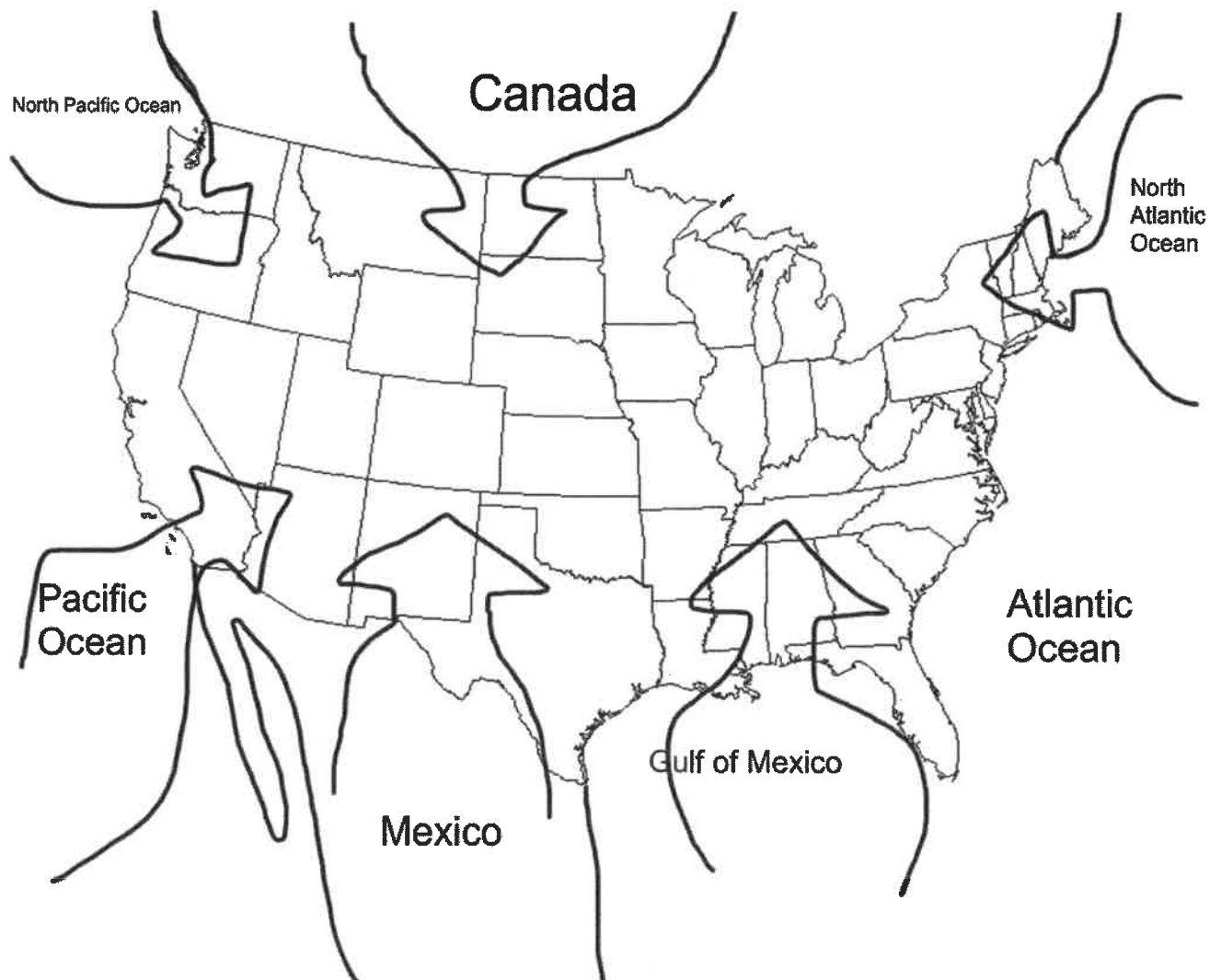
**Air Masses are:** Huge bodies of air with similar \_\_\_\_\_ and \_\_\_\_\_

**The characteristics of air masses come from their source region (where they form)**

- If they develop over \_\_\_\_\_ ( \_\_\_\_\_ ) = \_\_\_\_\_
- If they develop over \_\_\_\_\_ ( \_\_\_\_\_ ) = \_\_\_\_\_
- If they develop on \_\_\_\_\_ ( \_\_\_\_\_ ) = \_\_\_\_\_
- If they develop over \_\_\_\_\_ ( \_\_\_\_\_ ) = \_\_\_\_\_

Air Mass Type	Map Symbol	Formed Over...	Characteristics
Continental Tropical	cT	Hot land	Hot, dry air
Continental Polar	cP	Cold land	Cold, dry air
Maritime Polar	mP	Cool ocean	Cool, moist air
Maritime Tropical	mT	Warm ocean	Warm, moist air

Fill in the types of air masses pictured below:

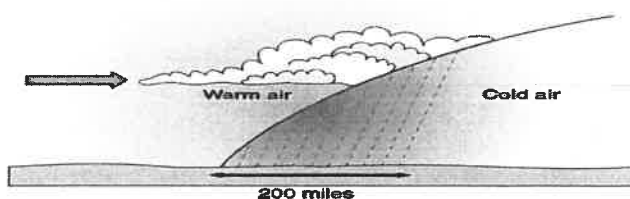


Fronts are the boundaries between 2 air masses  
\*\*\*Fronts always bring bad weather

## Warm Front



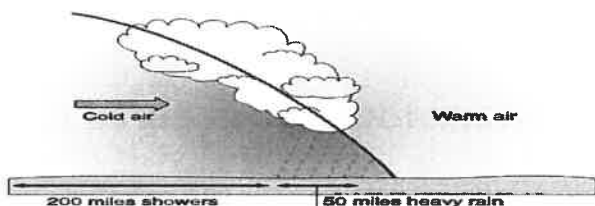
Result = gentle, long-lasting precipitation, followed by humid, warm air



## Cold Front



Result = Quick, violent storms followed by cool, dry air

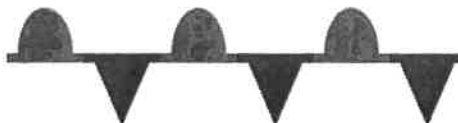


## Occluded Front



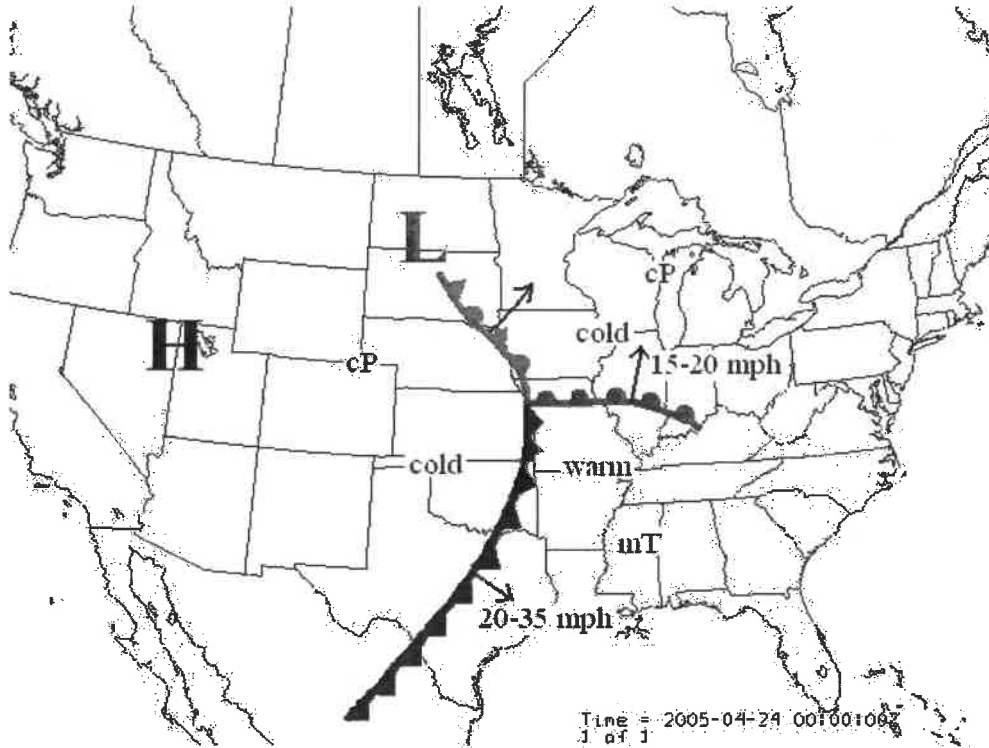
Result = precipitation

## Stationary Front



Result = long periods of precipitation

# Forecasting Weather (meteorologists use radar, satellite images, weather balloons and weather instrument readings)



Shade in the area where precipitation would be likely to occur

All Hurricanes are \_\_\_\_\_

What makes a hurricane different from a tornado?

Hurricanes	Tornadoes
	Form when cP and mT air masses meet over land (most often)
Last a long time	
	Cover a small area
Most of the damage comes from the storm surge Winds 70-150 mph	
	Occur in spring and early summer

# Severe Weather Notes

## Thunderstorms are:

- \_\_\_\_\_ that produce:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Occur along \_\_\_\_\_
- Cumulonimbus clouds - \_\_\_\_\_

## When do thunderstorms occur?

- Two atmospheric conditions required for thunderstorms
  - 1- \_\_\_\_\_
  - 2- \_\_\_\_\_

## Lightning

- An electric discharge that occurs between a \_\_\_\_\_ area and a \_\_\_\_\_ area
- Can occur: **Cloud to cloud, Cloud to earth or within the same cloud**

## Thunder

- \_\_\_\_\_
- Occurs during Thunderstorms
- Lightning \_\_\_\_\_, then thunder second because \_\_\_\_\_

## Tornado

- \_\_\_\_\_  
with low pressure that touches the ground
- Wind moving in 2 directions cause the air to spin with cloud, creating a funnel
- \_\_\_\_\_
- Winds- 120+ km/hr (winds from 70 mph - 300 mph)

## Hurricane

- \_\_\_\_\_  
of at least 120 km/h (70 mph)
- Most powerful storms on earth
- \_\_\_\_\_
- Must have low pressure
- \_\_\_\_\_
- Causes a Storm surge and flooding in coastal areas (Long Island!)

## Hurricane formation

- \_\_\_\_\_
- Spin counter-clockwise in Northern Hemisphere and clockwise in the southern due to the Coriolus Effect (Spin of earth)
- \_\_\_\_\_
- Hurricanes die once they move over \_\_\_\_\_

## Blizzards

- Huge winter storms with \_\_\_\_\_
- Ice storms can occur as rainfall begins to freeze and can disrupt electric and phone service.
- \_\_\_\_\_
- \_\_\_\_\_

## Severe Weather Safety

- Listen to the \_\_\_\_\_ during storm for information
- Lightning is attracted to tall objects - if outside stay away from trees or lay down if in the open
- \_\_\_\_\_

## Storm Preparation

List 7 items you should have in your emergency kit:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

## Climate Change

- Scientists around the world believe that the Earth's temperature is gradually increasing.
- Global warming – \_\_\_\_\_  
\_\_\_\_\_
- Scientists believe that an increase in CO<sub>2</sub> emissions is causing the temperature to rise.

## What causes Global Warming?

- When Carbon Dioxide (CO<sub>2</sub>) is trapped in the atmosphere, it causes the **GREENHOUSE EFFECT**
- \_\_\_\_\_ and \_\_\_\_\_ in the atmosphere trap heat and don't let it escape into space.

“These greenhouse gases act like a blanket”

## What human activities cause excess CO<sub>2</sub> Emissions?

- Breathing
- Burning Fossil Fuels such \_\_\_\_\_
- Deforestation \_\_\_\_\_

## What effect does Global Warming have on the earth?

- Melting Ice Caps in the Arctic and Antarctic which \_\_\_\_\_
- Plants/trees growing season is affected
- Animals like polar bears have to relocate \_\_\_\_\_ (habitat)
- Ocean waters are \_\_\_\_\_ causing large cyclonic (hurricanes) storms and death to some \_\_\_\_\_.

## How can we reduce CO<sub>2</sub> emissions?

- Burn less fossil fuels (**NON-RENEWABLE**)
  - Use \_\_\_\_\_ (shut off lights, unplug appliances, buy energy efficient appliances)
  - Use \_\_\_\_\_ (by carpooling, taking public transportation, buying smaller cars)
- Use Renewable sources of energy
  - Use \_\_\_\_\_ energy to produce electricity
  - Use \_\_\_\_\_ energy to produce electricity
  - Use \_\_\_\_\_ (dams) to produce electricity
  - Use \_\_\_\_\_ energy to heat our homes

## List 5 things you could do to reduce CO<sub>2</sub> emissions:

- 1.
- 2.
- 3.
- 4.
- 5.