

Warm Up 2: Winds
10-17-18

LT I can explain what causes winds

Q1 What would happen if all the condensation nuclei disappeared?

Q2 What is the difference between relative and absolute humidity?

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Q1 What would happen if all the condensation nuclei disappeared?

(A1) There would be no participation, the water cycle would stop.

Q2 What is the difference between relative and absolute humidity?

(A2) Relative humidity is dependent on the given temperature, absolute humidity is an exact count of the water vapor in the air regardless of temp.

There are several main factors that dictate Weather including:

- 1) Temperature
- 2) Wind
- 3) Precipitation

We are going to talk about Temp and Wind today.

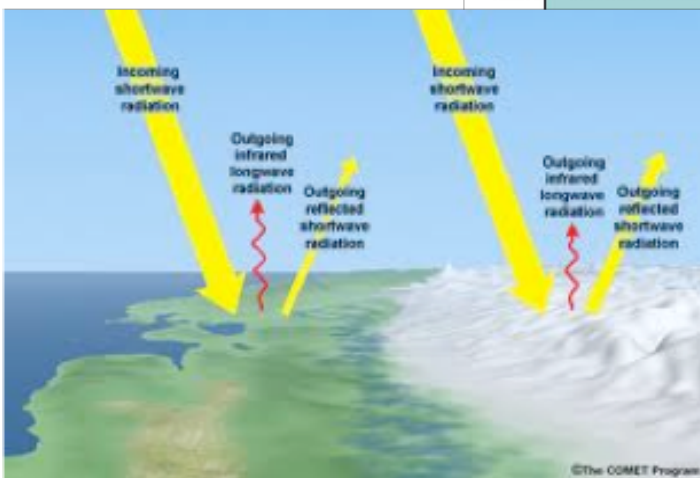
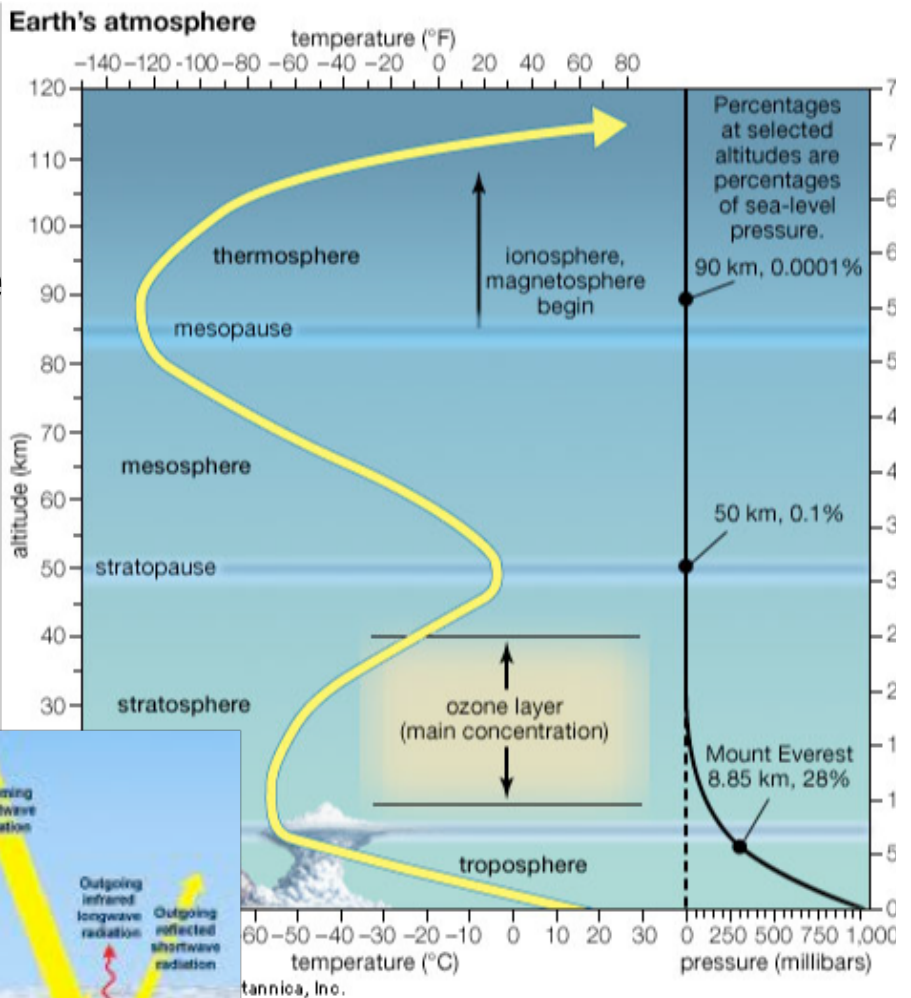
Vocab

5. High Pressure
6. Low Pressure
7. Pressure Gradient

Q What are the three ways we can transfer heat energy?

- A 1) Radiant
 2) Conduction
 3) Convection

Q How does the Sun heat the Troposphere?
 Lets take a look at the temp and atmosphere.



Notes 2: Creating Local Wind

- Step 1) Radiant heat energy ^(from the Sun) goes through the atmosphere and heats the Earth's surface.
- Step 2) The Earth's surface heats up the air in contact with the surface through conduction.
- Step 3) As the air heats, it becomes less dense and rises and heats the troposphere through convection.

Q What happens as the air rises, is there no more air there?

A Air from a different location moves in and fills the vacancy.

Q What does this process remind you of?

A. Convection currents of the mantle.

Notes 2: Local Wind

Q What is it called when air moves from one place to the next?

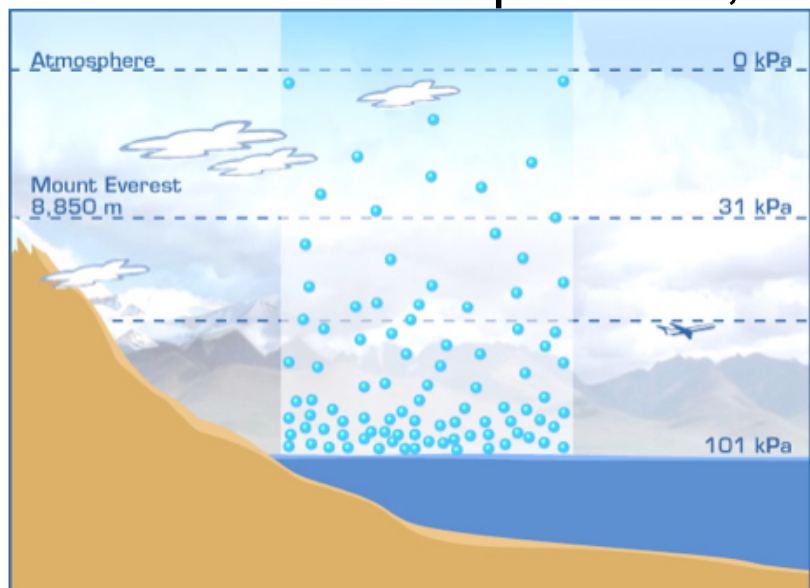
A Wind

Q What direction does air flow?

A High Pressure to Low Pressure

5 HP: where there is lots of air particles closely packed (more dense)

6 LP: where there is not a lot of air particles, less dense



Notes 2: Winds

Write in notes

Q Why are there High Pressures and low pressures.

A The earth is heated unevenly, causing hot parts and cooler parts resulting in less dense and more dense air.

- The change in pressure measured across a given distance is called a **pressure gradient**
- The pressure gradient results in a net force that is directed from high to low pressure and this force is called the "pressure gradient force".
- Movement of pressure systems=weather changes!!!

Why do high pressure cause good weather and low pressure bring bad weather?

https://www.youtube.com/watch?v=aiYyCurh_SU

Global Winds

Why do high pressures bring good weather and low pressures bring bad weather

https://www.youtube.com/watch?v=aiYyCurh_SU

Wind Cycles

<https://www.youtube.com/watch?v=Ye45DGkqUkE>

Coreolis Effect

<http://www.youtube.com/watch?v=aeY9tY9vKgs>

Add highlights of the video to your notes 2: Wind

How do cold fronts bring rain?

<https://www.youtube.com/watch?v=nc5xc55qgHc>

HW 2: Wind

Please draw a picture of the steps involved with the development of wind.

Start with the sun and label

Sun, radiation, conduction, convection, high pressure, low pressure, pressure gradient

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Q1 What would happen if all the condensation nuclei disappeared?

Q2 What is the difference between relative and absolute humidity?

Q3 How is the bottom layer of the atmosphere heated

Q4. What is the result of this uneven heating?

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Q3 How is the bottom layer of the atmosphere heated?

Ⓐ3. The sun's **radiation** heats the surface of the earth, the air in contact with the surface is heated through **Conduction**, the hotter less dense air rises and heats through **Convection**

Q4. What is the result of this heating?

Ⓐ4. The convection creates movement of the air known as WIND