WEATHER VARIABLES

WHAT WEATHER VARIABLES HELP PREDICT WEATHER?
WEATHER VARIABLES

- TROPOSPHERE - THE LOWEST PORTION OF THE ATMOSPHERE WHERE TEMPERATURE DECREASES

- WEATHER OCCURS IN THIS LAYER ONLY
EARTH'S LAYERS

TROPOSPHERE
WEATHER VARIABLES

• **STRATOSPHERE** - A REGION OF THE ATMOSPHERE WHERE TEMPERATURE INCREASES
EARTH’S LAYERS

STRATOSPHERE

TROPOSPHERE
WEATHER VARIABLES

• **MESOSPHERE** - A REGION OF THE ATMOSPHERE WHERE TEMPERATURE DECREASES AGAIN
WEATHER VARIABLES

• THERMOSPHERE - THE OUTER MOST SHELL OF THE ATMOSPHERE WHERE TEMPERATURE INCREASES
EARTH’S LAYERS

- THERMOSPHERE
- MESOSPHERE
- STRATOSPHERE
- TROPOSPHERE
EARTH SCIENCE REFERENCE TABLES
WEATHER VARIABLES

- WEATHER - THE PRESENT CONDITION OF THE ATMOSPHERE --- INCLUDING TEMPERATURE, PRESSURE, WIND, HUMIDITY, AND MOVEMENT

- CHANGES ARE DUE MAINLY TO UNEQUAL HEATING OF LAND MASSES, OCEANS, AND THE ATMOSPHERE
WEATHER VARIABLES

• **TEMPERATURE** - THE HEAT ENERGY PRESENT IN THE ATMOSPHERE AT THAT LOCATION

• INFLUENCES AFFECTING TEMPERATURE ARE SOLAR RADIATION, ANGLE OF INSOLATION, HOURS OF DAYLIGHT, AND REFLECTION OFF THE ATMOSPHERE
WEATHER VARIABLES

- **AIR PRESSURE** - the force exerted on a unit of area by the air that is exerted equally in every direction

- **Air is a mixture of gases with molecules that are fast moving and far apart**
WEATHER VARIABLES

• AIR PRESSURE INCREASES AS YOU DECREASE YOUR ELEVATION

• AIR PRESSURE DECREASES AS YOU INCREASE YOUR ELEVATION
EARTH SCIENCE REFERENCE TABLES
WEATHER VARIABLES

• **AIR CURRENTS** - RISING OR SINKING MOVEMENT OF AIR PERPENDICULAR TO THE GROUND

• **WIND** - THE HORIZONTAL MOVEMENT OF AIR PARALLEL TO THE EARTH’S SURFACE
  
  - WIND BLOWS FROM AREAS OF HIGH PRESSURE TO AREAS OF LOW PRESSURE
WEATHER VARIABLES

- **SEA BREEZE** - During the day land heats up faster than the water, thus creating a low pressure zone over the land.

- Wind blows from areas of high pressure to areas of low pressure.
Warm air rises, cools and descends

H
Lower temperature, higher pressure

L
Higher temperature, lower pressure

SEA BREEZE
WEATHER VARIABLES

• **LAND BREEZE** - DURING THE NIGHT Land cools faster while Water holds its heat, thus creating a low pressure zone over the water

  • Wind blows from areas of high pressure to areas of low pressure
LAND BREEZE

Warmer air rises, cools and descends

Higher temperature, lower pressure

Lower temperature, higher pressure
WEATHER VARIABLES

CLOUD FORMATION

• AIR IS WARMED FROM SUN HEATED SURFACES BECOMING LESS DENSE AND RISING

• AS IT RISES IT EXPANDS AND DECREASES IN TEMPERATURE AND PRESSURE
WEATHER VARIABLES

CLOUD FORMATION

• WATER VAPOR IN THE AIR THEN CONDENSES AS THE AIR IS COOLED TO THE DEWPOINT

  • CONDENSATION - THE PROCESS WHICH GAS TURNS TO A LIQUID

• REMEMBER: R.E.C.C.

  • RISES - EXPANDS - COOLS - CONDENSES