## Unit 6: Weather- Understanding Weather Variables

	Date:	Block:
/eather:		
	are individual pieces of information	that describe specific conditions of the
tmosphere.		
Examples:		
orecasting – is making	based upon	conditions of the atmosphere.
	ather Stations:	17Z 22 APR 2019 Isobors. Fronts. Rodor & Data Fronts at 15Z
measured in °C/F (less comn oom Temperature according 2. Barometric Pressure:	to pg. 13 of the ESRT:°F or	NCEP/HWS/HGAL NATIONAL 2 KM BASE REFLECT 0.00 DEG Blue — Isobars (4 mb)
oom Temperature according  2. Barometric Pressure:	to pg. 13 of the ESRT:°F or	r°C
oom Temperature according  2. Barometric Pressure:  - Measured in	to pg. 13 of the ESRT:°F or	r°C _ of mercury ("), and atmospheres (atm).
oom Temperature according  2. Barometric Pressure:  - Measured in  - Air pressure depends	on howpacked the r	r°C _ of mercury ("), and atmospheres (atm). molecules are and howthey are
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or	to pg. 13 of the ESRT:°F or	r°C _ of mercury ("), and atmospheres (atm). molecules are and howthey are
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or	on howpacked the r	r°C _ of mercury ("), and atmospheres (atm). molecules are and howthey aremb
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or OR  - Barometer:	on howpacked the r	of mercury ("), and atmospheres (atm).  molecules are and howthey aremb
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or OR  - Barometer:	on how (mb),packed the r "One atmosphere" is equal to " of mercury ( on pg. 13 ESRT)	of mercury ("), and atmospheres (atm).  molecules are and howthey are
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or OR  - Barometer:  - At sea level there is  Relationships:	on how (mb),packed the r "One atmosphere" is equal to " of mercury ( on pg. 13 ESRT)	of mercury ("), and atmospheres (atm).  molecules are and howthey are  mb  29.92 in
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or OR  - Barometer:  - At sea level there is  Relationships:  a	on how (mb),packed the r "One atmosphere" is equal to" of mercury ( on pg. 13 ESRT) lbs. of pressure/inch	of mercury ("), and atmospheres (atm).  molecules are and howthey are  mb  vacuum  Vacuum  (Density \( \psi\)
2. Barometric Pressure:  - Measured in  - Air pressure depends  - Sea Level Pressure or OR  - Barometer:  - At sea level there is  Relationships:  a  b	on how (mb),packed the reference of mercury (on pg. 13 ESRT)  (bs. of pressure/inch when : Why? Air when when : Why? Air when when when : Why? Air when	of mercury ("), and atmospheres (atm).  molecules are and howthey are  mb  29.92 in

- 1	Wind occurs because of		on earth.	
_ 1	Thethe difference in	, the		0.0
-	the wind speed. Speed	is given in mph or in knots		
	<ul> <li>Wind is named for the direction</li> </ul>		it	
	comes (a "SW" wind blows NE)			
	– An	measures wind sp	peed/direction	Market Name
	Air flows from regions of	to		
1 1 2 3	Pressure			
HIT	<ul> <li>And is where the _</li> </ul>		is th	ne
1	( ΔΡ	Pressure (high-low)/Distand	ce)	
	Draw and label diagrams of a sea breeze	e and a land breeze includi	ng information o	on relative
tem	peratures (cool vs. warm), pressures (high vs			
sinki	ng) and the direction the air moves horizont	ally between the zones of	land and sea (w	ind).
C D (D-		Land Durana (Aliaba)		
Sea Breeze (Da	y)	Land Breeze (Night)		
4. <u>Dew Poi</u>	nt Temperature: temperature at which water	er vapor will		to
become	drops of water or ice crystals.			
a. I	t indicates howt	he air is		
b. 1	The air must be for this t	to happen		
c. ¬	The dewpoint temperature depends on the	amount of		in the air;
I	t DOES NOT depend on the			
d. A	A dewpoint temperature ind	dicates a		sychrometer
C	concentration of water vapor.		Wet-bulb thermometer	recommends 0
How to Measure	Dew Point Temperature:		The second second	- 4
	·		Cloth sock (Wet)	Dry-bulb thermomerter
<ul> <li>Using a_</li> </ul>		_	(1104)	Handle ←

This will yield two temperatures: A "	Dry	Wet	Dry-	DPT
temperature and "" temperature	Bulb	Bulb	wet	
In order to find the dew point, you must find the	26°C	20 °C		
between the dry and wet bulb temperatures ()				
and your ESRT page(Dew Point Chart)	6 °C	5 °C		
Dry Day:	12 °C	8 °C		
of moisture will evaporate.	18 °C	17 °C		
The wet bulb will bethan the dry bulb.	16 C	17 C		
the wet balb will bethan the dry balb.	14 °C	14 °C		
Humid/Wet Day:				
Aof moisture will evaporate.	0 °C	-3 °C		
The wet bulb will be much cooler than the dry bulb.				
Dew Point and Cloud Formation:  Types of clouds	Cirrocumulus	spno		
temperature	MIL	Cirrus H	Cumulonimb	ıs
andtemperature	7.7	Cines	- 7	30
determine the at which	3.5	spin	louds with vertical	S
water vapor will condense to form	Altocumulu	9	louds with vertical	levelopment
in the sky,		ž	49	A. 30
C. Paul fast not	No. 1		CONTRACTOR OF THE PARTY OF THE	
OIOII	lus	tratus	Cumulus	256
the ground On a dry day, the air must cool	- 6	ow clos	-	
in order to form a				
cloud (lower DP temp), thus the air must rise		<u> </u>		
into the				
troposphere for condensation to occur.				
5. Absolute Humidity: refers to				
Fact: Water vapor molecules arethan Nitrogen molecule	es. This mea	ns that		air
is than dry air				
As a result:				
- As (H20 molecules	replace N	molecules	)	
If air pressure decreases, air can, thus holding more _				
Making the connection: Why does the air feel more humid during the sum	mer month	ns?		

6. Relative Hu	midity		Warmer air- greater capacity to hold water		-Water-vapor	
air (	compares the amount of (%), to the amount the air can ed upon the	which is	vapor		capacity	Cooler air- lesser capacity to hold water
-As 	air temp, Relative hur	midity will		Water vapor	Water vapor	Vapor Water vapor
-A 1	L00% RH means the air is		<del>.</del>	20% elative umidity	50% relative humidity	100% relative humidity
-At	ground level this will indicate		<u>.</u>	5 P.M.	11 A.M.	5 A.M.
Making the connect	ion: Why is it always more humid, wet,	or "dewy" dui	ring the morning	hours of the a	day as compa	red
to the afternoon?		98				
·	rtive Humidity to Air Temperature: Problems using pg. 12 of ESRT	Air Temperature (°F)  Air Temperature (°F)	Relative	rumany	100 90 80 70 60 50 40 30 20	Relative Humidity (%)
		20 <sub>12 2</sub>		2 2 4 6	8 10 12	
•	the dry bulb temperature is	widnight —	— a.m. — No	oon — p.m.	Midnight	
10 °C and the wet bu	ulb is 8¢?					
2.)If the difference temperature ?	between the dry and wet bulb is 6 C°, ar	nd the relative	humidity is 41%  Graph 1: Air Temperatur			
•	rive humidity if the dry bulb temperatur bint is 18 C?	e is 34				
what is likely to forr	m at ground level?	28 26 26	au er refere	Buddet		
precipitation to occi	what time of day would you predict ur in Syracuse using information on air ew point?	24 — 22 — 20 — 12:00 a.m	n. 4:00 p.m. 8:00 a.m.	12:00 a.m. 4:00		2:00 a.m.
In Summary:		8	00 a.m. 12:00 a.m. 4:0	00 p.m. 8:00 a.m. 2 Dec 3	12:00 a.m. 4:00 p.m. Dec 4	
HEAVY AIR (High P	Pressure)	Light Air (Lov	v Pressure)	Date and Time		1