

# Chapter 20.1

Name or Group Members:

Class Period \_\_\_\_\_

## Lab – Student Worksheet

### PART I - Finding the Dew Point

1. Initial temperature of water \_\_\_\_\_ °F
2. Temperature of water when dew first forms (dew point temperature) \_\_\_\_\_ °F
3. Name three ways nature can cool a large mass of air.

### PART II - Finding the Humidity (Using Math)

Formula →  $\text{Relative Humidity} = \frac{\text{Absolute Humidity}}{\text{Capacity}} \times 100$

**Example 1.** At 10° C, the water capacity is 11 g/m<sup>3</sup>.

**Example 2.** At 25° C, the water capacity is 22 g/m<sup>3</sup>.

4. If the temperature is 10° C and the absolute humidity in Example 1. (in the box above) is 5.5 g/m<sup>3</sup>, calculate the relative humidity. Show your work.

5. If the temperature is 25° C and the absolute humidity for Example 2 (in the box on the previous page) is 5.5 g/m<sup>3</sup>, calculate the relative humidity. Show your work.

## Relative Humidity Table

Dry-Bulb Temp. (°F)	Difference between Dry-Bulb and Wet-Bulb Temperatures (°F)														
	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°	13°	14°	15°
32	90	79	70	60	50	40	31	22	13	4	—	—	—	—	—
34	91	81	72	62	53	44	35	26	18	9	1	—	—	—	—
36	91	82	74	65	56	48	39	31	22	14	6	—	—	—	—
38	92	83	75	67	59	51	43	35	27	19	11	4	—	—	—
40	92	84	76	68	61	53	46	38	31	23	16	9	2	—	—
42	92	85	77	70	62	55	48	41	34	28	21	14	7	—	—
44	93	85	78	71	64	57	50	44	37	31	24	18	12	5	—
46	93	86	79	72	65	59	52	46	40	34	28	22	16	10	4
48	93	86	80	73	67	61	54	48	42	36	31	25	19	14	8
50	93	87	81	74	68	62	56	50	45	39	33	28	22	17	12
52	94	87	81	75	69	63	58	52	47	41	36	31	25	20	15
54	94	88	82	76	70	65	59	54	49	43	38	33	28	23	20
56	94	88	83	77	71	66	61	56	51	45	40	36	31	26	22
58	94	89	83	78	72	67	62	57	52	47	42	38	33	29	24
60	94	89	84	78	73	68	63	58	54	49	44	40	35	34	27
62	95	89	84	79	74	69	64	60	55	51	46	42	38	33	29
64	95	90	84	79	74	70	65	60	56	51	47	43	38	34	30
66	95	90	85	80	75	71	66	61	57	53	48	44	40	36	32
68	95	90	85	80	76	71	67	62	58	54	50	46	42	38	34
70	95	90	86	81	77	72	68	64	59	55	51	48	44	40	36
72	95	91	86	82	77	73	69	65	61	57	53	49	45	42	38
74	95	91	86	82	78	74	69	65	61	58	54	50	47	43	39
76	96	91	87	82	78	74	70	66	62	59	55	51	48	44	41
78	96	91	87	83	79	75	71	67	63	60	56	53	49	46	43
80	96	91	87	83	79	75	72	68	64	61	57	54	50	47	44
82	96	92	88	84	80	76	72	69	65	61	58	55	51	48	45
84	96	92	88	84	80	76	73	69	66	62	59	56	52	49	46
86	96	92	88	84	81	77	73	70	66	63	60	57	53	50	47
88	96	92	88	85	81	77	74	70	67	64	61	57	54	51	48
90	96	92	89	85	81	78	74	71	68	65	61	58	55	52	49
92	96	92	89	85	82	78	75	72	68	65	62	59	56	53	50
94	96	93	89	85	82	79	75	72	69	66	63	60	57	54	51

### Observations and Results (°F)

Air temperature (°F)	
Dry-bulb temperature after spinning (°F)	
Wet-bulb temperature after spinning (°F)	
Difference between dry- and wet-bulb temperature values (°F)	
Relative humidity (%)	

1. Define the terms relative humidity and dew point.
2. Given your results, how do relative humidity and dew point compare?
3. Compare your relative humidity values with your local weather station or Internet weather site. How do your values compare to the actual or reported values?