FLINN SCIENTIFIC

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Relative Humidity and Dew Point Worksheet

Data Table 1. Direct Dew Point Measurement

Initial temperature (°F)	
Dew point temperature (°F)	

Data Table 2. Sling Psychrometer Dew Point Measurement

Dry-bulb temperature (°F)	
Wet-bulb temperature (°F)	
Wet-bulb depression (°F)	
Dry-bulb factor (see Reference Table 1	
Wet bulb depression × dry-bulb facto	
Dew point temperature (°F)	

Reference Table 1. Dew Point Table

Dry-bulb Temperature (°F)	Factor	Dry-bulb Temperature (°F)	Factor	Dry-bulb Temperature (°F)	Factor
32	3.32	**53**	2.00	**74**	1.73
33	3.01	**54**	1.98	**75**	1.72
34	2.77	**55**	1.96	**76**	1.71
35	2.60	**56**	1.94	**77**	1.70
36	2.50	**57**	1.92	**78**	1.69
37	2.42	**58**	1.90	**79**	1.69
38	2.38	**59**	1.89	**80**	1.68
39	2.32	**60**	1.88	**81**	1.68
40	2.29	**61**	1.87	**82**	1.67
41	2.26	**62**	1.86	**83**	1.67
42	2.23	**63**	1.85	**84**	1.66
43	2.20	**64**	1.83	**85**	1.65
44	2.18	**65**	1.82	**86**	1.65
45	2.16	**66**	1.81	**87**	1.64
46	2.14	**67**	1.80	**88**	1.64
47	2.12	**68**	1.79	**89**	1.63
48	2.10	**69**	1.78	**90**	1.63
49	2.08	**70**	1.77	**91**	1.62
50	2.06	**71**	1.76	**92**	1.62
51	2.04	**72**	1.75	**93**	1.61
52	2.02	**73**	1.74	**94**	1.61

Data Table 3. Relative Humidity Calculation

Dry-bulb temperature (°C)	
Dew point temperature from Part I (°C)	
Dew point temperature from Part II (°C)	
Saturation vapor pressure (millibars)	
Actual vapor pressure (millibars) Part I	
Actual vapor pressure (millibars) Part II	
Relative Humidity Value from Part I	%
Relative Humidity Value from Part II	%

Data Table 4. Sling Psychrometer Relative Humidity Measurement

Dry-bulb temperature (°F)	
Wet-bulb temperature (°F)	
Difference between dry-bulb and wet-bulb (°F)	
Relative Humidity (see Reference Table 2)	%

Reference Table 2. Relative Humidity Table

Dry Bulb Temp. (°F)	Difference between Dry Bulb and Wet Bulb (measured in degrees Fahrenheit)														
	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

Student Questions

1. Define dew point.

2. Define relative humidity.

3. Which relative humidity calculation found in Part III was closer to the measured relative humidity found using the sling psychrometer in Part IV?