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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

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Dew Point Calculation Chart

Air Temp. (°F)	Relative Humidity Value														
	30	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**
32	6	9	12	14	17	19	20	22	24	25	27	28	29	30	32
34	8	11	14	16	18	20	22	24	25	27	28	30	31	33	34
36	9	12	15	18	20	22	24	25	27	29	30	31	33	35	36
38	11	14	17	19	22	24	25	27	29	30	32	34	35	37	38
40	13	16	18	21	23	25	27	29	31	33	34	36	37	39	40
42	14	17	20	23	25	27	29	31	33	35	37	38	39	41	42
44	16	19	22	24	27	29	31	33	35	37	38	40	41	43	44
46	17	21	23	26	28	30	33	35	37	39	40	42	43	45	46
48	19	22	25	28	30	33	35	37	39	41	42	44	45	47	48
50	20	24	27	30	32	35	37	39	41	42	44	46	47	49	50
52	22	25	28	31	34	36	39	41	43	44	46	48	50	51	52
54	24	27	30	33	36	38	41	43	45	46	48	50	51	53	54
56	25	29	31	35	38	40	42	45	46	48	50	52	53	55	56
58	27	30	34	37	40	42	44	46	48	50	52	54	55	57	58
60	28	32	36	39	41	44	46	48	50	52	54	56	57	59	60
62	30	34	37	41	43	46	48	50	52	54	56	58	59	61	62
64	31	36	39	42	45	48	50	52	54	56	58	60	61	63	64
66	34	38	41	44	47	50	52	54	56	58	60	61	63	65	66
68	35	39	43	46	49	51	54	56	58	60	62	63	65	67	68
70	37	41	45	48	51	53	56	58	60	62	64	65	67	69	70
72	39	43	46	50	52	55	57	60	62	64	66	67	69	71	72
74	41	45	48	51	54	58	59	62	64	66	68	69	71	73	74
76	42	47	50	53	56	59	61	63	66	68	70	71	73	75	76
78	44	48	52	55	57	61	63	65	68	70	71	73	75	77	78
80	46	50	54	57	60	62	65	67	69	71	73	75	77	78	80
82	48	85	55	59	62	64	67	69	71	73	75	77	79	80	82
84	49	54	57	60	63	66	69	71	73	75	77	79	81	82	84
86	51	55	59	62	65	68	71	73	75	77	79	81	83	84	86
88	53	57	61	64	67	70	72	75	77	79	81	83	85	86	88
90	55	59	63	66	69	72	75	77	79	81	83	85	87	88	90
92	56	61	64	68	71	74	76	79	81	83	85	87	89	90	92
94	58	62	66	70	73	75	78	80	83	85	87	89	91	92	94

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Flinn Weather Activities Kit Worksheet

Precipitation Data Table

Date	Amount of Precipitation (in)	Type of Precipitation

Post-Lab Questions

1. When collecting precipitation, one inch of rain is equal, on average, to 12 inches of snow.
   a. Calculate the total amount of precipitation you collected.

   b. During a blizzard that lasted for 36 hours from January 22nd to January 24th, 2016, Glengary, West Virginia, received 42 inches of snowfall. Calculate the total precipitation as rain.

   c. In August of 2013, Nashville, Tennessee, experienced a historic rainfall of 7.8 inches in a 6-hour time period. Compared to the blizzard of Glengary, West Virginia, which city received more liquid precipitation per hour?

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Relative Humidity and Dew Point Data Table

Date & Time	Air Temperature (°F)	Dry-bulb Temperature after spinning (°F)	Wet-bulb Temperature after spinning (°F)	Difference between Dry-bulb and Wet-bulb Temperatures (°F)	Relative Humidity %	Dew Point (°F)

2. First predict and then test the results of the following challenges using the sling psyhrometer.
   a. Which area in the school will give the highest relative humidity value?

   b. Which area in the school will give the lowest relative humidity value?

3. A student collected data for the dew point, which was 67 °F and air temperature, which was 68 °F. Based on this information, explain whether the relative humidity is considered high or low.

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Name_____

4. Using a sling psychrometer, a student gathered the following data:
   dry bulb temperature = 60 °F wet bulb temperature = 55 °F air temperature = 60 °F
   a. Determine the relative humidity.

   b. Determine the dew point.

Barometric Pressure Data Table

Date	Time	Movement (mm)	Calculated Barometric Pressure (inches Hg)	Reported Barometric Pressure (inches Hg)	Forecasted Weather Conditions
Baseline Readings					

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5. The National Weather Service gave a local barometric pressure reading for Batavia, Illinois of 30.27 in Hg at 11:53 a.m. on January 27, 2016. When students checked their classroom barometer at 2 p.m., they recorded a drop of 2 mm.

   a. What is the barometric pressure for 2 p.m.?

   b. A drop in barometric pressure indicates what type of weather is approaching?

6. Looking at your data, what is the correlation between barometric pressure and weather conditions?

Wind Measurements Data Table

Date	Time	Revolutions per minute	Circumference (ft)	Wind Speed (mph)

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Name_____

7. Calculate the wind speed using an anemometer with a circumference of 1.25 feet that turned 213 revolutions in one minute.

8. From your data, choose a day with the highest wind speed and a day with the lowest wind speed. Discuss the connection between wind speed and barometric pressure (Hint: use the data from the same day on your Barometric Pressure Data Table).

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