

Have you ever heard of “dry heat”? Relative humidity refers to how \_\_\_\_\_, or filled to capacity with water vapor, the atmosphere is.

The air you’re breathing right now is about 1% \_\_\_\_\_, 21% is \_\_\_\_\_, and 78% is \_\_\_\_\_. There are also some solid dust particles in there and even a few liquid droplets.

Earth’s atmosphere goes up \_\_\_\_\_ km (300 miles). Right now you’re reading this paper in the \_\_\_\_\_ sphere. Above that is the \_\_\_\_\_ sphere, followed by the \_\_\_\_\_ sphere and the \_\_\_\_\_ sphere. The \_\_\_\_\_ sphere is at the very top.

Think of a catchy phrase to help you remember the layer names

T \_\_\_\_\_

S \_\_\_\_\_

M \_\_\_\_\_

T \_\_\_\_\_

E \_\_\_\_\_

Data:

My Dry bulb reading: \_\_\_\_\_ °C

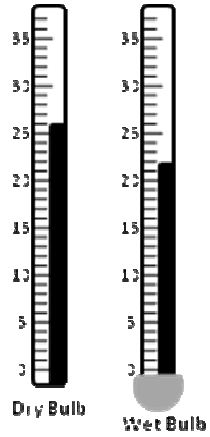
My Wet bulb reading: \_\_\_\_\_ °C

Depression: \_\_\_\_\_ °C

Humidity: \_\_\_\_\_ %

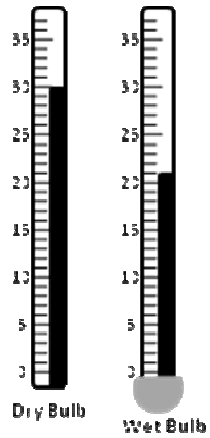
Dry bulb reading	Difference between dry and wet bulb temperature, in Celsius															
	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	14'	16'	18'	
2	84	68	52	37	22	8										
4	86	70	56	42	29	26	3									
6	86	73	60	47	34	22	11									
8	87	75	63	51	39	28	18	7								
10	88	76	65	54	44	33	23	14	4							
12	89	78	67	57	47	38	29	20	11	3						
14	89	79	69	60	51	42	33	25	17	9						
16	90	80	71	62	54	45	37	29	22	14						
18	91	81	73	64	56	48	41	33	26	19	6					
20	91	82	74	66	58	51	44	37	30	24	11					
22	91	83	75	68	60	53	46	40	34	27	16	5				
24	92	84	76	69	62	55	49	43	37	31	20	9				
26	92	85	77	70	64	57	51	45	45	39	34	14	4			
28	92	85	78	72	65	59	53	47	42	37	26	17	8			
30	93	86	79	73	67	61	55	49	44	39	29	20	12	4		
32	93	86	80	74	68	62	56	51	46	41	32	23	15	8	1	
34	93	87	81	75	69	63	58	53	48	43	34	26	18	11	5	
36	93	87	81	75	70	64	59	54	50	45	36	28	21	14	8	

1. In this example, what is the wet-bulb depression?

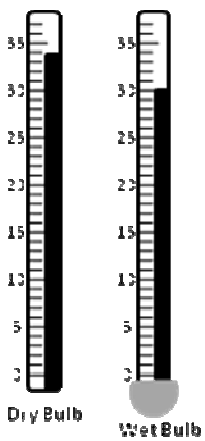


$$\frac{\quad}{\text{dry}} - \frac{\quad}{\text{wet}} = \frac{\quad}{\quad}$$

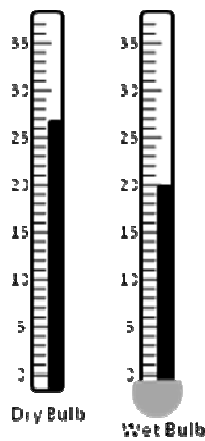
2. What is the approximate relative humidity? (Use the chart on page 1.)



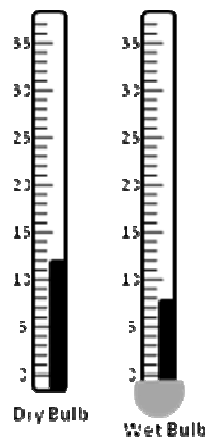
3. Which of these four indicates the *lowest* relative humidity? The *highest*?



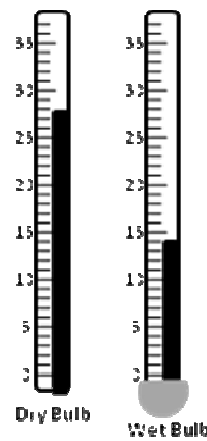
A



B



C



D

## ANSWERS AND TEACHER INSTRUCTIONS:

“saturated”

“water vapor”

“oxygen”

“nitrogen”

“500”

“tropo”

“strato”

“meso”

“thermo”

“exo”

Dry and Wet Bulb Reading: Answers will vary. In this part of the activity have students read a thermometer while it's dry and record the temperature.

Then have them cover the bulb of the thermometer with a cotton ball or piece of cotton that's wet with *room temperature water*, and leave it for a few minutes to adjust.

While waiting on it to change, go over the questions on page 2.

1.  $26^{\circ} - 22^{\circ} = 4^{\circ}$
2.  $30^{\circ} - 21^{\circ} = 9^{\circ}$ . According to the chart on page 1, a dry bulb that reads  $30^{\circ}$  then drops  $9^{\circ}$  equals a relative humidity of 44%.
3.
  - A.  $34^{\circ}$  & dropping  $3^{\circ} = 81\%$
  - B.  $27^{\circ}$  & dropping  $7^{\circ} = \sim 52\%$
  - C.  $12^{\circ}$  & dropping  $4^{\circ} = 57\%$
  - D.  $28^{\circ}$  & dropping  $14^{\circ} = 8\%$