

# Chill with Daechelle

Learn all about wind chill with singer Daechelle!



**I**t's still two months before her 13th birthday, and Daechelle has already won a big award from *Billboard* magazine for her "Fearless" single, appeared on the *Bratz* soundtrack, and signed a major record deal. Her career is hot!

Also hot? The weather in Southern California, where Daechelle lives. With winter on the way, we asked if she'd spent much time in the cold. "My dad is from Colorado, so I've been out there where it snows and everything, but I haven't really lived in really cold weather," she told *MATH*. So has she ever

heard about *wind chill*? "No, I have not, what is that?" she asked.

Wind chill is the outside temperature people feel as a result of the wind. It can be very different from the actual temperature. The stronger the wind blows, the colder it seems to our bodies—and the quicker *frostbite* can occur (which is very dangerous). The National Weather Service developed a chart showing the relationship between actual temperature, wind speed, and wind chill. We'll help Daechelle read it, so she'll know when to really bundle up for winter tours!

—by Sarah Klein

## WHAT TO DO

Use the wind-chill chart to answer the questions.



## Wind Chill Chart



Wind (mph)	Temperature (°F)																			
	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	-69	-75
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	-78	-84
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	-83	-89
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	-87	-93
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	-90	-96
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	-93	-99
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	-95	-101
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	-97	-104
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-92	-99	-106
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-94	-101	-108
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-95	-102	-109
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-83	-90	-96	-103	-110

Frostbite Times: 30 minutes (light blue), 10 minutes (medium blue), 5 minutes (dark blue)

**1** The numbers across the top of the wind-chill chart above represent the actual air temperature in degrees Fahrenheit (°F). The numbers down the left side represent wind speed in miles per hour (mph). To find a wind-chill temperature, find the spot where the temperature column and the wind-speed row meet. For example, what would the wind-chill temperature be if the actual temperature is 20°F and the wind speed is 15 mph?

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**2** What would the wind-chill temperature be if the actual temperature is 5°F and the wind speed is 35 mph?

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**3** If the wind speed is 30 mph and the wind-chill temperature is -53°F, what is the actual temperature?

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**4** California's not *always* hot, Daechelle! On January 20, 1937, the actual temperature in Boca, California, hit -45°F, the lowest ever in the state. Let's say the wind speed that day was 25 mph. If so, what would the wind-chill temperature have been?

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**5** Daechelle was born on February 7. The coldest wind-chill temperature ever on that day, anywhere in the world, happened in 1892 in Verkhoyansk, Russia. The wind chill reached -90°F!

List two different combinations of actual temperature and wind speed that could create a wind-chill temperature of (even colder!) -91°F.

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**6a.** The shaded areas on the chart show wind-chill temperatures at which frostbite can occur within 5, 10, and 30 minutes. What is the highest actual temperature on the chart at which frostbite can occur for each time period?

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**b.** What is the lowest wind speed on the chart required for frostbite to occur for each time period?

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THERMOMETER: PHOTODISC; DAECHELLE: NELSEY EDWARDS/COURTESY OF GEFEN RECORDS; CHART: COURTESY OF NOAA NATIONAL WEATHER SERVICE