



# Air Pollution: What's the Solution?

## Student Worksheet : Temperature Inversions

Name: \_\_\_\_\_

Group: \_\_\_\_\_

### PART 1: INVERSIONS

1. Access the AIRNow PM archives for Salt Lake City, Utah on January 1, 2004.

What AQI level was reached for particulate matter on January 1, 2004?

2. Access the Weather Underground and obtain the weather conditions for Salt Lake City, Utah on January 1, 2004.

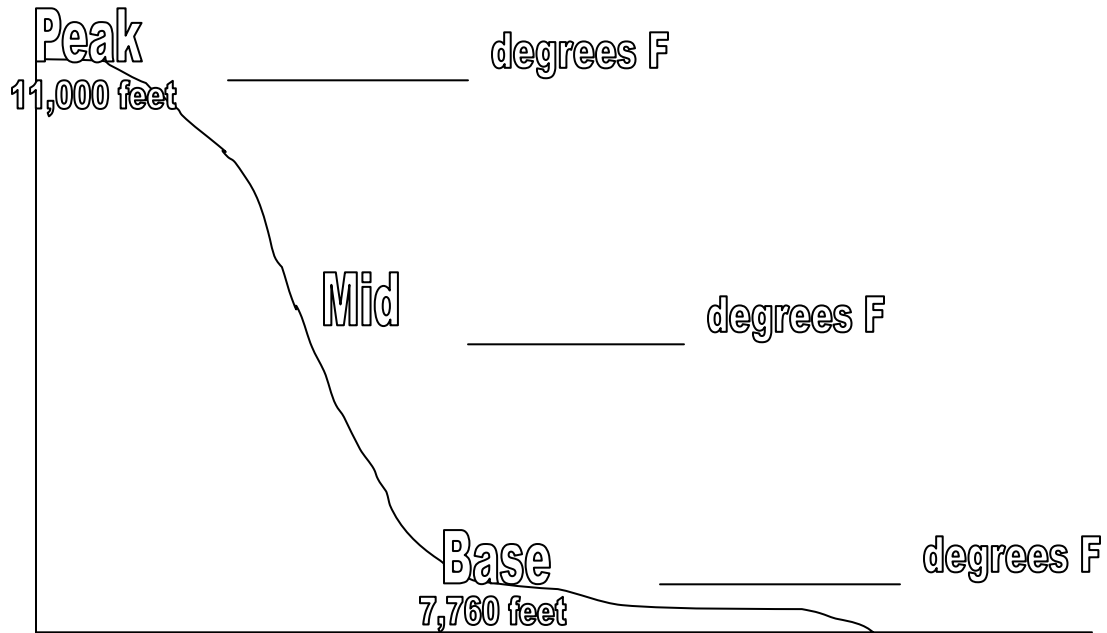
Record the weather data below.

Max. Temp.	Min. Temp.	Precipitation	Ave. Wind Speed

a) How do the weather conditions measured in Salt Lake City compare to the conditions recorded on January 1, 2004 at the Snowbird Ski Area, outside Salt Lake City, Utah?

Snowbird Snow Report				January 1, 2004			
New Snow		Snow Depth Mid-Mtn.	Snow Fall Year to Date	Temperature			Wind Hidden Peak
24 hr	48 hr			Tram Base	Mid- Mtn.	Hidden Peak	
0"	0"	156"	412"	40F	32F	26F	51 mph
38 F		Hi: 40F Lo: 33F		<b>Today's Forecast:</b> Overcast, unseasonably warm, with strong winds.			

3. Graph the temperature data below recorded on January 1, 2004 at the Snowbird Ski Area, outside Salt Lake City, Utah.



4. Access the AirNow PM archives for Salt Lake City, Utah, on January 9, 2004.

What AQI level was reached for particulate matter on January 9, 2004?

5. Access the Weather Underground and obtain the weather conditions for Salt Lake City, Utah on January 9, 2004.

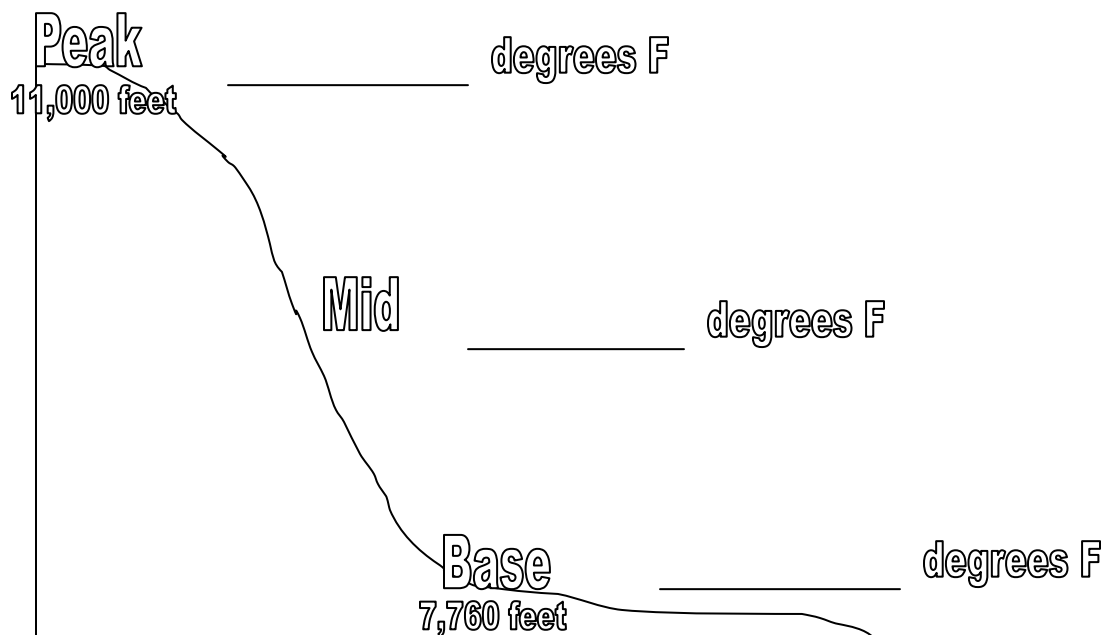
Record the weather data below.

Max. Temp.	Min. Temp.	Precipitation	Ave. Wind Speed

a) How do the weather conditions measured in Salt Lake City compare to the conditions recorded on January 9, 2004 at the Snowbird Ski Area, outside Salt Lake City, Utah?

Snowbird Snow Report				January 9, 2004			
New Snow		Snow Depth Mid-Mtn.	Snow Fall Year to Date	Temperature			Wind Hidden Peak
24 hr	48 hr			Tram Base	Mid- Mtn.	Hidden Peak	
0.12"	0.3"	158"	414"	20F	24F	36F	9 mph
17 F		Hi: 40F		<b>Today's Forecast:</b> Mostly Cloudy, 10% chance of snow, light to no wind.			
		Lo: 10F					

6. Graph the data below recorded on January 9, 2004 at the Snowbird Ski Area, outside Salt Lake City, Utah.



**PART 2 – REAL TIME DATA**

7. Use the AIRNow web site (select "Local Forecasts and Conditions" and click Utah on the US map; the Weather Underground web site (type "Snowbird, Utah" in the box in the upper left hand corner; and the Snowbird Resort web site - Snowbird, Utah (just outside Salt Lake City) to determine if there will be an inversion layer occurring in that area today. Describe below.

## **ASSESSMENT:**

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As a class or individually:

1. Use the AIRNow web site, the Weather Underground web site and select one site from the table below and determine if there will be an inversion layer occurring in that area today.

a) What do you notice about the temperatures at the bottom, mid-point and peak of the mountain on the two days? Explain.

b) What were the differences in the weather conditions on the two days? Explain.

c) List and explain the conditions that can create an inversion layer.