



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











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

## Tracking Ozone

### PART 1: GATHER THE DATA

1. Collect the ozone data for Trenton, NJ for July 19 - 24, 2004. Note: These images are not animated like the images used in the previous lesson.
2. Determine the AQI Color, Air Quality, and Maximum AQI Value for all seven days and enter the data into the table below.
  - NOTE: To determine the AQI Average value, find the average of the two numbers of the AQI range. For example, Green has a range of 0 – 50, with an average, of 25.
3. Access the Weather Underground site and collect the weather information for Trenton, NJ. For this lesson, gather the Maximum Temperature, the Wind Speed, and Events for each of the seven days. This information is found in the smaller table at the top of the web page.

Ozone Event - Trenton, New Jersey - July 19 – 24, 2004							
Date	AQI Color	Air Quality	Max. AQI Value	AQI Ave. Value	Max. Temp.	Wind Speed	Events
July 19	Green	Good	50	25	80.1°F	8.4 mph	rain
July 20							
July 21							
July 22							
July 23							
July 24							

AQI Colors, Air Quality and AQI Value		Wind Scale	
	Good – Green 0 – 50 (average 25)		0 – 12 mph light
	Moderate – Yellow 51 – 100 (average 75)		13 – 24 mph moderate
	Unhealthy for Sensitive People – Orange 100 – 150 (average 125)		25 – 31 mph strong
	Unhealthy – Red 151- 200 (average 175)		32 – 63 mph gale
	Very Unhealthy – Purple 201 – 300 (ave. 250)		64 – 73 mph storm/hurricane

4. Make the following three bar graphs using the data in your table. Ask your teacher for assistance if you are unsure how to make the graphs.
  - Ozone v. Time
  - Temperature v. Time
  - Wind Speed v. Time

**PART 2: ANALYZE THE DATA**

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Once you have completed the graphs, use your data table and graphs to answer the following questions:

1. For each day of the Ozone Event, compare it to the day before and fill in the blank with Increased (↑) or Decreased (↓) or stayed the same.

	<b>AQI</b>	<b>Max. Temp.</b>	<b>Wind Speed</b>
July 20 (compared to July 19)	<u>same</u>	<u>same</u>	<u>  ↑  </u>
July 21 (compared to July 20)	<u>      </u>	<u>      </u>	<u>      </u>
July 22 (compared to July 21)	<u>      </u>	<u>      </u>	<u>      </u>
July 23 (compared to July 22)	<u>      </u>	<u>      </u>	<u>      </u>
July 24 (compared to July 23)	<u>      </u>	<u>      </u>	<u>      </u>

2. By comparing the arrows on the chart above, which columns have more in common, AQI and Temperature or AQI and Wind Speed?
  
3. During the six days of the Ozone Event, which days had temperatures above 80°F?
  
4. How many of the days with temperatures above 80°F had AQI average values above 100?
  
5. How many of the days with temperatures above 80°F, and AQI average values above 100 had strong winds?
  
6. How many of the days with temperatures above 80°F, and AQI average values above 100 had light winds?

7. Based on your observations, write a sentence that describes the temperature and wind conditions found on days with AQI average values over 100.
  
8. Between July 22 and July 24, the last three days of the Ozone Event, the maximum temperature decreased by 14°F, there were heavy rains reported, and the ozone level decreased. In your own words, describe what you think happened to create the changes in the weather and how the weather changes lowered ozone levels.
  
9. Now that you have tracked the changes in ozone levels and weather over the days of an Ozone Event, do you think it is possible to predict an Ozone Event?
  
10. If you answered yes, write a sentence that sums up the type of weather necessary to make an Ozone Event likely to occur.
  
11. If you answered no, what other types of information would you need in order to be able to predict an Ozone Event?