



# Weather and Bird Sightings

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## Purpose

### Problem Statement

For many years at Tualatin Valley Junior Academy, the 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> graders have been going to the bird blind to record bird sightings. This year, the eighth grade class and I made our first trip to the Downy Creek Bird Blind behind our school on November 19, 2007.

While I was there I began to notice that the colder the temperature got, the more birds seemed to show up at our bird blind to eat. I began to wonder why this was the case, and so when I learned that we were going to do a bird report with the data we collected, I decided to make that my topic: Does warm or cold weather affect how many birds will show up at the Downy Creek Bird Blind to feed?

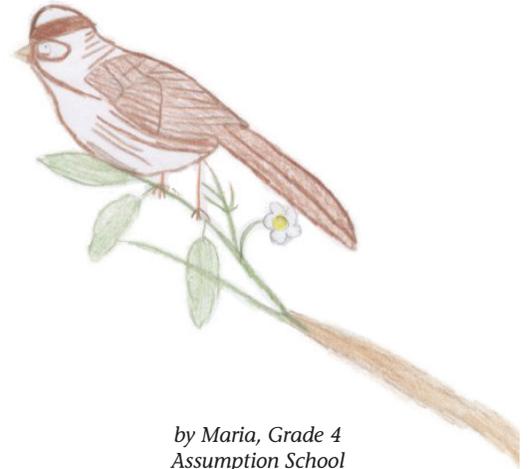
### Hypothesis

I was thinking about my problem statement during each of my visits to the Downy Creek Bird Blind, and decided to base my investigations on the following hypothesis: If temperature affects how many birds show up at the Downy Creek Bird Blind to feed, then there will be more birds that show up to feed on days that the temperature is below 4°, as opposed to days when the temperature is above 4°.

### Procedure

In order to conduct a well thought out experiment, I had to use the following items: BirdSleuth Tally Sheets, writing utensils, the weather bug information provided on [www.tvja.org](http://www.tvja.org) (used to determine the temperature, barometric pressure, humidity, wind speed and wind chill) my Field Guide to Birds, and binoculars.

I went to the Downy Creek Bird Blind on 12 occasions, from November 19, 2007 through February 15, 2008. On each occasion I went down for about fifteen minutes around 12 noon. Each time before I went, I recorded the temperature, the number of people, the wind chill, the barometric pressure, the percentage of light, wind speed, wind direction, precipitation, dew point and wet bulb, and the cloud cover. After I finished recording everything on a BirdSleuth tally sheet, I headed out to the bird blind. When I arrived at the Downy Creek Bird Blind, I chose a comfortable spot, and then recorded the starting time. While I was



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there, I observed the total number of birds that I saw, and recorded them on the tally sheet. I decided to observe the total number of birds that visited our bird blind for my experiment instead of just one or two species. That way, I would have more data to show for my graphs. Plus that way, it would be easier for me to come to a conclusion in my experiment since there would be more data to look at.

There are many different variables that you have to take into account when you are doing a scientific bird report. Among these is the independent variable of the experiment. The independent variable is the one factor that you change in an experiment. It is the manipulated variable in the experiment. For my experiment, the independent variable was something that I couldn't myself change but still changed nevertheless because of the weather. The weather automatically controlled how cold or how warm the temperature was outside. Another important variable that you have to take into account is the dependent variable. The dependent variable is the factor that changes as a result of the independent variable. It is the responding variable, and in my experiment the dependent variable was how many birds came to the bird blind to feed. The number of birds that showed up was a result of how cold or warm the temperature was.

## Results

Throughout the 12 days that I went to the Downy Creek Bird Blind, the largest number of birds that I saw was 37 birds. I saw 37 birds on two different occasions, once on November 28, 2007, and then again on February 15, 2008. On November 28, the temperature was 3° Celsius and on February 15, 2008 the temperature was 9° Celsius. On both days I went out

<b>Date</b>	<b>11/19/07</b>	<b>11/26/07</b>	<b>11/28/07</b>	<b>12/6/07</b>	<b>1/2/07</b>	<b>1/8/08</b>
<b>Temp. °C</b>	7	1	3	8	3	4
<b>Total # of Birds</b>	5	6	37	1	17	13
<b>Date</b>	<b>1/15/08</b>	<b>1/25/08</b>	<b>1/31/08</b>	<b>2/4/08</b>	<b>2/12/08</b>	<b>2/15/08</b>
<b>Temp. °C</b>	1	2	5	2	6	9
<b>Total # of Birds</b>	17	15	3	6	10	37

to the bird blind for about 20 minutes. The other 10 times I went down to the Downy Creek Bird Blind, the number of birds I sighted ranged from 1-17, and the temperatures varied from 1° Celsius all the way up to 9° Celsius.



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## BirdSleuth Asks...



Zachary's data table shows us the dates he made his observations, and the two variables that he measured: temperature and number of birds. Given this set of data, can you create a graph that displays the relationship between those three variables?

## Conclusion

After looking over my graphs I came to the conclusion that there were indeed more birds that came to the Downy Creek Bird Blind when the temperature was at or under 4° Celsius than when the temperature was over 4° Celsius. I originally figured that there would be more birds at the Downy Creek Bird Blind if the temperature was under 4° Celsius

and I was correct. I figured that there would be more birds based on the theory that if it was colder, then the birds would have more trouble finding food elsewhere because it might have been frozen, or all gone because of the lack of the sun to make the food grow. However, there are also many other variables that could have come into play in my experiment. For one thing the commotion of my fellow classmates was often high on many of the days. The commotion from my classmates could have accounted for the lack of birds on some of the days. Also the amount of time that we spent out at the bird blind often differed by about 10 minutes. I remember sometimes we went out for only five minutes and other times we went out for 25. You also can't forget the fact that there were about 14 people out there at the Downy Creek Bird Blind. Who knows, maybe if only one person went down to the bird blind then more birds would have come.

All these variables came into play in my experiment, and each one could have changed my experiment drastically. I still don't know what would have happened if all those variables had been taken out of the picture. Maybe you could be the person to do this same experiment but without the extra variables.

## Bibliography

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