**FINAL PROJECT IS DUE WEDNESDAY, APRIL 12, 2017**

Objective: Record sunrise and sunset times as well as high and low temperatures throughout the course of the school year in order to observe seasonal patterns in daylight and temperature.

Location assigned:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Coordinates of Location:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions for High/Low Temperature Graph:

1. Using [www.wunderground.com](http://www.wunderground.com), record the high and low temperatures for the following dates. This is best done after the day is over, so you have actual temperatures instead of predicted.

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Low Temperature | High Temperature | Temperature Difference  |
| 10/12 |  |  |  |
| 10/19 |  |  |  |
| 10/26 |  |  |  |
| 11/2 |  |  |  |
| 11/9 |  |  |  |
| 11/16 |  |  |  |
| 11/23 |  |  |  |
| 11/30 |  |  |  |
| 12/7 |  |  |  |
| 12/14 |  |  |  |
| 12/21 |  |  |  |
| 12/28 |  |  |  |
| 1/4 |  |  |  |
| 1/11 |  |  |  |
| 1/18 |  |  |  |
| 1/25 |  |  |  |
| 2/1 |  |  |  |
| 2/8 |  |  |  |
| 2/15 |  |  |  |
| 2/22 |  |  |  |
| 3/1 |  |  |  |
| 3/8 |  |  |  |
| 3/15 |  |  |  |
| 3/22 |  |  |  |
| 3/29 |  |  |  |

2. Graph all of the data on the “High and Low Temperatures” Graph. For low temperatures, use a blue color pencil. For high temperatures, use a red color pencil. Connect the dots of the low temperatures to make a line graph. Repeat this process for the high temperatures. Make sure to create a key for your graph.

Directions for Sunrise/Sunset Time Graph:

1. Using [www.timeanddate.com/astronomy](http://www.timeanddate.com/astronomy), record the sunrise and sunset times for your location for the following dates. (Make sure you include AM and PM after your time.) You should also record the length of daylight.

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Sunrise | Sunset | Length of Daylight |
| 10/12 |  |  |  |
| 10/19 |  |  |  |
| 10/26 |  |  |  |
| 11/2 |  |  |  |
| 11/9 |  |  |  |
| 11/16 |  |  |  |
| 11/23 |  |  |  |
| 11/30 |  |  |  |
| 12/7 |  |  |  |
| 12/14 |  |  |  |
| 12/21 |  |  |  |
| 12/28 |  |  |  |
| 1/4 |  |  |  |
| 1/11 |  |  |  |
| 1/18 |  |  |  |
| 1/25 |  |  |  |
| 2/1 |  |  |  |
| 2/8 |  |  |  |
| 2/15 |  |  |  |
| 2/22 |  |  |  |
| 3/1 |  |  |  |
| 3/8 |  |  |  |
| 3/15 |  |  |  |
| 3/22 |  |  |  |
| 3/29 |  |  |  |

2. Graph the sunrise and sunset times from your table on the “Sunrise and Sunset Times” Graph. Plot sunrise using an orange color pencil and plot sunset using a purple color pencil. Connect the dots of the sunrise times to make a line graph. Repeat this process with the sunset times. Make sure to create a key for your graph.

Reflection

For each of the following graphs, attach a sheet of paper that address the following:

For the high/low temperature graph:

* What trends do you notice in your data?
* What time of year was the temperature the greatest?
* What time of year was the temperature the lowest?
* Are there times of the year when the temperature fluctuates a lot? When? Why do you think that is happening?
* Are there times of the year when the temperature fluctuates very little? When? Why do you think that is happening?
* Do you think your location’s coordinates impact the temperature data? Why or why not?

For the sunrise/sunset graph:

* What trends do you notice in your data?
* What time of year was the length of daylight the greatest?
* What time of year was the length of daylight the least?
* How do the sunrise times change over time?
* How do the sunset times change over time?
* Do you think your location’s coordinates affect the patterns that you see in both sunrise and sunset times as well as the length of daylight? Why or why not?
* Do you see any correlation between your sunrise/sunset data and your high/low temperature data? How is this data related?

**FINAL PROJECT IS DUE ON WEDNESDAY, APRIL 12, 2017**

1) You will have data checks on the following dates listed below. Each data check is worth 5 points.

* First data check (for 10/12, 10/19, 10/26, 11/2, and 11/9) : Due on 11/11 \_\_\_\_\_\_\_
* Second data check (for 11/16, 11/23, 11/30, 12/7, and 12/14): Due on 12/15 \_\_\_\_\_\_\_
* Third data check (for 12/21, 12/28, 1/4, 1/11, and 1/18) : Due on 1/20 \_\_\_\_\_\_\_
* Fourth data check (for 1/25, 2/1, 2/8, 2/15, and 2/22): Due on 2/24 \_\_\_\_\_\_\_
* Fifth data check (for 3/1, 3/8, 3/15, 3/22, and 3/29): Due on 3/30 \_\_\_\_\_\_\_

2) All points are plotted correctly on graphs (50 points): \_\_\_\_\_\_\_

3) Reflection questions answered thoroughly and correctly (25 points): \_\_\_\_\_\_\_

 Total \_\_\_\_\_\_\_