Name: _____ **Date:** _____ **Class:** _____

Soil Temperature Write-Up Requirements

Upon completion of the activity, upload your data to the class spreadsheet, *Soil Temperature Experiment*. Once everyone has uploaded his/her data; make a copy of the sheet and begin examining the data and representing your findings. Present your findings and conclusions to the class by creating a presentation, writing a report, or creating a poster or handouts. Include in your presentation—at a minimum—the following items.

Remember: The goal of the data collection experiment is to determine how accurate the temperature sensors are by comparing them to each other.

- ❑ Recap of the engineering challenge and overall experiment/procedure
- ❑ Graphs that represent the data well and help explain the findings (time plots, box plots)
- ❑ Conclusion of your findings, including the accuracy of the temperature probes used
- ❑ Tool analysis reflection (answer the following questions):
  1. What are some benefits of the temperature sensors that we used in the classroom?
  2. What are some of the limitations of the temperature sensors that we have in the classroom?
  3. If you were to design a new, more convenient temperature sensor for farmers to use in their fields, what "new and improved" features would you want your thermometer to have?
  4. What other important considerations do you advise be kept in mind when making your new temperature sensor?
- ❑ Activity reflection (answer the following questions):
  5. How does this experiment relate to what has been taught in class?
  6. How can this information be used in precision agriculture?
  7. How has conducting this data collection and analysis experiment benefited your learning?)
  8. How trustworthy is our experimental data? Think back on the experimentation process. What outlying circumstances may have skewed your and other teams' collected data?
  9. How can this activity be improved to enhance it for future students?