

# SOIL TEMPERATURE OVER ONE DAY: FIELD WORKSHEET



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

Class: \_\_\_\_\_

Date: \_\_\_\_\_

1. Pick two sites to serve as test sites. One should get sunlight all day long (perhaps in an open field or the middle of a yard), and the other should be in shade all day long (perhaps under a tree or near the side of a building). The goal of this activity is to see how soil temperature changes over the course of one day, so your first reading will take place before sunrise, and you will take new measurements every two hours until after the sun has set.

2. Mark two points on your thermometer in permanent marker: one 5cm from the tip, and another 10cm from the tip. These will ensure that you take temperature measurements at the correct depths.

3. Measure the ambient air temperature by holding up your thermometer and waiting 2 minutes. Record your results in the table on the next page.

## 5. Measuring the Soil Temperature:

If the soil is hard, use the nail or skewer to make a pilot hole for the thermometer. This is to prevent unnecessary damage to the thermometer. Submerge the thermometer up to the 5cm mark and wait 2 minutes for the reading to stabilize before recording.

Submerge the thermometer to the 10cm mark (again puncturing the soil with the nail or skewer if necessary). Wait 2 minutes before recording.

6. Repeat the 5cm and 10cm measurements on two more places within 25 cm of the original measurement, and record on the table on the next page.

7. Repeat the process for the second site.

8. Repeat every two hours and record on the table on the next page.

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

1. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

2. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

3. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

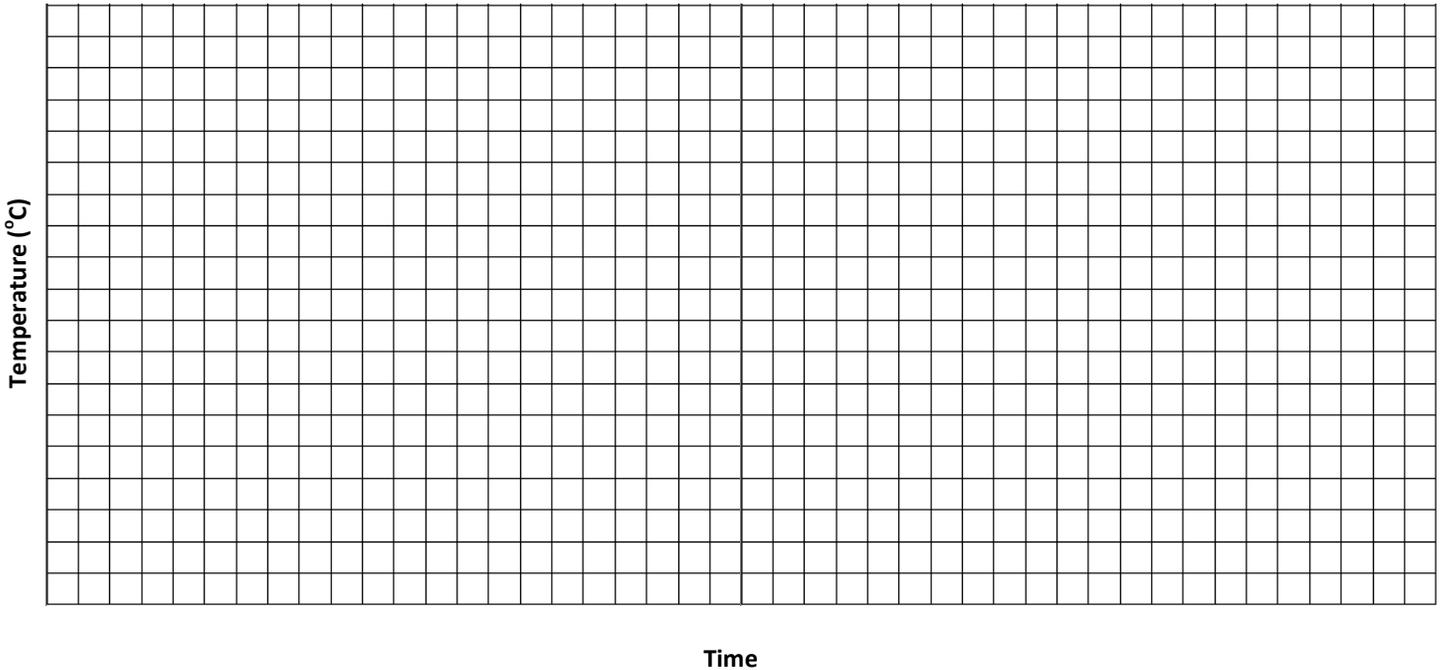
4. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

5. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

6. Time:							Air Temp: _____		
Site:	5 cm			10 cm			5cm Avg	10cm Avg	Difference between 5cm and 10cm averages
Sun									
Shade									

11. Use the graph provided to make a line graph for average temperatures over time. You should have five separate lines: Air temp, 5 cm in the sun, 10 cm in the sun, 5 cm in the shade, and 10 cm in the shade. Use different colors or symbols to distinguish your lines from one another. Use your graph to answer questions 12-15.

Title: \_\_\_\_\_



12. How does the soil temperature change over the course of the day?

13. How does sunlight affect soil temperatures? Does it affect the temperature at 5cm more than 10cm?

14. Does soil temperature appear to rise and fall with air temperature? Are the changes in soil temperature more or less drastic than the changes in air temperature over time?

15. What other trends do you notice from your graph? Are there any anomalies in your data? If so, what theories do you have about them?