Lab Report – Estimating Soil Organic Matter (SOM)

Group Members:
Date(s):
Class/Period:
Locations of Soil Samples:

Objective

What are you trying to find out in this investigation?
(Write a short statement explaining the goal of this activity — e.g., to estimate the percentage of soil organic matter in different soils using a soil color chart and connect it to soil health indicators such as nutrient cycling, water retention, and carbon storage.)

Safety Precautions

List at least three safety or hygiene rules you followed during this activity.

1.
2.
3.

Materials Used

List all materials and tools used during your investigation.
(Add any additional materials your group used.)

Procedure Summary
Briefly describe the main steps your group followed to complete the activity.
(Example: We collected soil from two locations, mixed multiple sub-samples for each, and moistened the soil if needed. Using the soil color chart, we matched the moist soil color to estimate % SOM and recorded our results. We then compared both samples to discuss how SOM affects soil health.)

Data Collection
Soil Sampling Log

Soil Sample	Collection Location	Depth Collected (cm)	# of Sub-Samples Mixed	Notes (moisture, texture, smell)
A				
B				

SOM Estimation Data

Soil Sample	Observed Color (Chart Match)	Estimated % SOM	Notes (aggregation, darkness, other features)
A			
B			

Guiding Questions

1. Which soil sample had the higher estimated % SOM?

2. How does higher SOM affect nutrient cycling (release of N, P, S)?

3. How does SOM improve water-holding capacity and soil structure?

4. What land management practices could increase SOM in soils over time?

Reflection and Analysis

1. Summary of Findings

Summarize your results. Which soil had higher SOM and what might that indicate about its health and management history?

2. Why SOM Matters

Explain why soil organic matter is considered a key indicator of soil health.

3. Application and Recommendations

If you were advising a farmer or gardener, which soil would you recommend for growing crops, and why?

Conclusion

Summarize what you learned about how soil organic matter supports nutrient cycling, water retention, and carbon storage, and how management practices can enhance or degrade SOM over time.

Appendix

Attach:

- Photos or sketches of soil samples and color matches
- Completed data tables
- Soil color chart reference (e.g., University of Illinois SOM chart)
- Notes on field conditions (moisture, location, vegetation cover, etc.)