Lab Report – Biochar vs. Pollution

Group Members:
Date(s):
Class/Period:
Location:

Objective

What are you trying to find out in this investigation?
(Write a short statement explaining the goal of this activity — e.g., to test whether biochar can remove pollutants from contaminated water more effectively than soil alone.)

Safety Precautions

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

1.
2.
3.

Materials Used

List all materials used during the experiment.
(Add any additional tools or materials used.)

Procedure Summary
Briefly describe the main steps your group followed to complete the experiment.
(Example: We labeled three cups for each treatment — control, soil, and soil + biochar. We added $CuSO_4$ solution, mixed in the materials, stirred, allowed time to settle, and then recorded observations for color change and pH.)

Data Collection
Setup Table

Cup	Treatment	Materials Added	Starting Color	Starting pH
A	Control	10 mL $CuSO_4$ only	Blue	_____
B	Soil	10 mL $CuSO_4$ + 6.0 g soil	Blue	_____
C	Soil + Biochar	10 mL $CuSO_4$ + 4.0 g soil + 2.0 g biochar	Blue	_____

Observation Table (After Settling 7–8 min)

Cup	Final Color / Clarity	Final pH	Notes (odor, particles, etc.)
A (Control)			
B (Soil)			
C (Soil + Biochar)			

Guiding Questions

1. Which treatment showed the clearest water?

2. Did pH levels differ between treatments? If so, how?

3. What does the difference between Cups A, B, and C tell you about biochar's role in water purification?

4. What might be some real-world uses of biochar for water or soil cleanup?

Reflection and Analysis
1. Summary of Findings
Describe what you discovered from your experiment.
(Example: The cup with biochar had the clearest water, showing that biochar helps bind or filter contaminants.)

2. Environmental & Agricultural Impacts
Explain how using biochar could affect:
Water quality:

Soil health:

Farming sustainability:

3. Recommendations
If you were advising a farmer or environmental engineer, what two realistic actions would you recommend for using biochar effectively?

Recommendation 1:

Why would this help?

Recommendation 2:

Why would this help?

Conclusion

Summarize what you learned about how biochar helps remove pollutants and how this experiment connects to sustainable farming and circular economy practices.

Appendix

Attach:

- Photos or sketches of your setup
- Completed data tables
- Any pH readings, graphs, or summary charts
- Notes or additional observations