

Name:

Date:

Class:

Design Sheet

Part 1: Plan Your Design

1. What makes a rock good for storing gas?

2. Why is a cap rock important?

3. Sketch Your Model

(Label layers, materials, and injection point)

Draw here:

4. Design Decisions

Design Feature	Your Choice
Porous layer material	
Cap rock material	
Cap rock thickness	
Injection volume (mL)	

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Part 2: Build & Test

Trial	Porous Material	Cap Rock Material	Cap Thickness (cm)	Injected Solution (mL)	Leak Time (s)	Leak Height (cm)	Spread Width (cm)
1							
2							
3							
4							
5							

Part 3: Analyze Your Results

1. Which design lasted the longest before leaking? Why?

2. Which design had the least leakage?

3. How did cap rock thickness affect leakage?

4. Which material worked best as a cap rock? Why?

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Part 4: Redesign

What ONE change will you make? (circle one)

- Cap thickness
- Material type
- Layer order
- Injection volume

Explain your change:

Part 5: Reflection

1. What trade-offs did you observe between storage and leakage?

2. What are two limitations of this model compared to real underground CO₂ storage?

- a.

- b.

3. How might engineers monitor leaks underground?
