

Oil-Eating Bacteria Worksheet

Part I. The Slick

Each day describe the condition of the water and the oil in each Petri dish. Consider textures, colors, consistency, and turbidity. Draw sketches if helpful.

Day	Petri Dish OO (oil only)	Petri Dish OEB (oil-eating bacteria)
1		
2		
3		
4		
5		
6		
7		
8		

Part IIa. The Beaches, Control

Each day describe the condition of the water and the oil in the control Petri dish. Consider textures, colors, consistency, and turbidity. Draw sketches if helpful.

Day	Fine Sand Beach	Fine Gravel Beach	Coarse Gravel Beach
1			
2			
3			
4			
5			
6			
7			
8			

Part IIb. The Beaches, Oil-Eating Bacteria

Each day describe the condition of the water and the oil in each chamber of the partitioned Petri dish. Consider textures, colors, consistency, and turbidity. Draw sketches if helpful.

Day	Fine Sand Beach	Fine Gravel Beach	Coarse Gravel Beach
1			
2			
3			
4			
5			
6			
7			
8			

Part III. Summary Questions

1. Why was the “OO” Petri dish, oil only, used in Part I of this experiment? What purpose did it serve?
2. Describe the sequence of changes that were observed in the “OEB” Petri dish in Part I. Assuming that these changes illustrate biodegradation, write a working definition of this term.
3. Which beach material seemed to “absorb” oil in a small concentrated area versus allowing it to spread quickly? What problem does absorption in a small area cause the oil-eating bacteria?
4. Which beach material was the easiest to bioremediate? Explain.
5. What evidence would support the claim, “the bacteria ingested the oil in the Petri dish”?
6. What factors might explain the difference in biodegradation on each beach? Remember that the oil-eating bacteria need oxygen as well as oil to thrive and grow.
7. What other uses would oil-eating bacteria have besides cleaning up oil spill disasters? Who else might make use of oil-eating bacteria?