

Scientific Case: Biology

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"prompts": [
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    "step": 1,
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"prompt": "This is the first key frame of a continuous four-part visual event sequence showing a whale fall. A massive whale carcass has just settled on the dark, barren abyssal plain of the deep ocean floor. The water is clear, with minimal sediment disturbed.",

"explanation": "This establishes the initial state of a whale fall, a significant source of organic material in the nutrient-poor deep sea. The absence of scavengers indicates the carcass has just arrived."

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    "step": 2,
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"prompt": "This is the second key frame of a continuous four-part visual event sequence showing a whale fall. From the same fixed viewpoint, the massive whale carcass is now being consumed by a swarm of mobile scavengers. Large sleeper sharks, hagfish, and crabs tear at the flesh, initiating the first stage of decomposition.",

"explanation": "This frame depicts the 'mobile scavenger' stage of a whale fall. Large, highly mobile deep-sea fauna are attracted to the carcass and rapidly consume the soft tissues. This is the first major step in transferring the whale's biomass to the deep-sea ecosystem."

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    "step": 3,
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"prompt": "This is the third key frame of a continuous four-part visual event sequence showing a whale fall. The whale skeleton is now mostly bare, with small patches of remaining tissue. A diverse community of smaller organisms, like polychaete worms and crustaceans, has colonized the bones and surrounding sediment.",

"explanation": "This 'enrichment opportunist' stage follows the removal of most soft tissue. Smaller, less mobile species colonize the bones and enriched sediment, continuing the nutrient transfer. This stage can last for months to years. The camera perspective highlights the shift in community structure from large mobile scavengers to smaller, stationary organisms."

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    "step": 4,
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"prompt": "This is the final key frame of a continuous four-part visual event sequence showing a whale fall. The last remnants of bone are being consumed by bone-eating Osedax worms and chemosynthetic bacteria. The surrounding sediment shows a lingering patch of unique life, but the main resource is nearly gone.",

"explanation": "Chemosynthetic bacteria metabolize sulfides from the decaying bones, supporting a unique community including Osedax worms that bore into the bone. This final stage completes the nutrient cycle, recycling the whale's biomass back into the deep-sea ecosystem."

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