

Informational Reading: Central Idea & Textual Evidence



Use the matching sheet ID when checking answers.

Read the passage carefully, then answer the questions by determining the central idea and citing direct textual evidence.

1. Which statement best captures the CENTRAL IDEA of the informational text?

Answer: B. The discovery of hydrothermal vent ecosystems revealed that thriving life can exist without sunlight through chemosynthesis.

The entire passage centers on the landmark 1977 discovery that revolutionized biology by demonstrating life powered by chemical synthesis rather than sunlight.

2. Which sentence from the text provides the STRONGEST textual evidence for how energy enters this deep-sea food web?

Answer: B. 'Specialized bacteria absorb hydrogen sulfide... and oxidize it to generate chemical sugars.'

Sentence B directly and explicitly explains the exact biochemical mechanism (bacteria converting hydrogen sulfide into sugars) that introduces energy at the base of the food chain.

3. Based on paragraph 2, what can the reader INFER regarding scientific searches for extraterrestrial life on icy moons like Europa or Enceladus?

Answer: B. Living organisms could potentially thrive in dark subsurface oceans warmed by geothermal heat.

The conclusion notes this discovery 'revolutionized humanity's understanding of where life can survive in the cosmos,' supporting the logical inference that subterranean oceanic warmth and chemicals can sustain organisms without direct sunlight.