Living Environment

Unit 7: Evolution: Will only the strongest survive!?

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**HOMEWORK 33: Walking Whales**

**Base your answers to questions 1 and 3 on the passage below and on your knowledge of biology.**

**When Whales Walked the Earth: A newly unearthed fossil is the missing link between land and marine mammals**

Standing two to three feet tall on legs adapted to wade through shallow water, the 48-million-year-old *Indohyus* is the missing link between modern day whales and their land-lubbing ancestors. Hans Thewissen of the Northeastern Ohio Universities Colleges of Medicine and Pharmacy recovered the skeleton in rocks from Kashmir, a disputed region between India and Pakistan, where the deer-like herbivore lived during the Eocene epoch, 56 to 34 million years ago.

The extreme thickness of its bones is a trait seen often in animals that are aquatic waders (thick, heavy bones counteract buoyancy and allow the animal to stay underwater more easily), and chemical traces in its teeth indicate that the animal ate plants in a freshwater environment. Scientists know that *Indohyus* belongs in the evolutionary path with whales because it has skeletal similarities to both modern whales and known primordial whale ancestors.

Source: Day Greenberg, “When Whales Walked the Earth,” *Popular Science,* May 2008

1. Identify *one* structure present in *Indohyus* mentioned in the passage. State how that structure made *Indohyus* successful in its environment during the Eocene Epoch. [2]

Structure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. Identify *one* characteristic of *Indohyus* that led some scientists to conclude that it was an ancestor of modern whales. [1]

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3. Identify another type of evidence scientists could use to support this theory. [1]

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4. Scientists call the fossil pictured to the right a “transitional fossil” because they say it has characteristics of both dinosaurs and birds. How does this fossil serve as evidence for the theory of evolution? [1]

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5. Summarize what you learned today. What is evolution? What evidence do scientists use to determine common ancestors among species? Explain how each type of evidence is used to demonstrate evolution. [5]

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