Evidence Of Evolution Worksheet

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Part 1: Building a Foundation

Which of the following best describes a fossil?

Hint: Think about what a fossil represents in terms of past life.

- ◯ A) A living organism found in sedimentary rock
- ◯ B) A preserved remain or impression of an organism from the past
- ◯ C) A rock formation that contains minerals
- ◯ D) A type of plant that existed millions of years ago

Which of the following are examples of homologous structures?

Hint: Consider structures that have similar origins but may serve different functions.

- ☐ A) The wings of a bat and the arms of a human
- ☐ B) The wings of a butterfly and the wings of a bird
- ☐ C) The flippers of a whale and the legs of a horse
- ☐ D) The eyes of a human and the eyes of a squid

Explain what is meant by 'transitional fossils' and provide an example.

Hint: Think about fossils that show intermediary forms between different groups.

List two key differences between homologous and analogous structures.

Hint: Consider their origins and functions.

1. Difference 1

2. Difference 2

Part 2: Comprehension and Application

What does the presence of vestigials structures in an organism suggest?

Hint: Think about the evolutionary history of the organism.

- ◯ A) The organism has recently evolved a new function
- ◯ B) The organism has no evolutionary history
- ◯ C) The organism shares a common ancestry with species that have functional versions of these structures
- ◯ D) The organism is unrelated to any other species

Which of the following statements about the fossil record are true?

Hint: Consider what the fossil record represents in terms of species and time.

- ☐ A) It provides evidence of the chronological order of species
- ☐ B) It shows that all species appeared at the same time
- ☐ C) It includes only complete specimens of organisms
- ☐ D) It contains gaps due to the rarity of fossilization

Describe how stratigraphy is used to determine the age of fossils.

Hint: Think about the layers of rock and their significance.

If a new fossil is discovered in a deeper layer of rock than previously known fossils, what can be inferred about its age?

Hint: Consider the relationship between rock layers and age.

- ◯ A) It is likely younger than the fossils found in shallower layers
- ◯ B) It is likely older than the fossils found in shallower layers
- ◯ C) It is the same age as the fossils found in shallower layers
- ◯ D) Its age cannot be determined from its position

Part 3: Analysis, Evaluation, and Creation

Which of the following best explains why analogous structures do not indicate common ancestry?

Hint: Think about the origins of these structures.

- ◯ A) They are found in organisms that live in the same environment
- ◯ B) They have different embryonic origins
- ◯ C) They perform different functions
- ◯ D) They are always identical in form

In what ways can the study of embryology provide evidence for evolution?

Hint: Consider the similarities observed in embryonic development.

- ☐ A) By showing similar stages of development in different species
- ☐ B) By identifying unique developmental pathways in each species
- ☐ C) By revealing vestigials structures during development
- ☐ D) By demonstrating that all embryos look identical

Analyze the significance of the Archaeopteryx fossil in understanding the evolution of birds.

Hint: Think about the features that link birds to dinosaurs.

Which of the following scenarios would most strongly support the theory of evolution by natural selection?

Hint: Consider the scenarios that demonstrate adaptation over time.

- ◯ A) A species of bird developing a new feather color due to genetic mutation
- ◯ B) A population of insects becoming resistant to a pesticide over several generations
- ◯ C) A mammal species suddenly appearing in the fossil record without any precursors
- ◯ D) A plant species growing taller in response to increased sunlight

Evaluate the role of natural selection in shaping the adaptations of a species of your choice. Discuss how these adaptations have allowed the species to thrive in its environment.

Hint: Think about specific adaptations and their benefits.

Propose two hypothetical scenarios where environmental changes could lead to evolutionary adaptations in a species. Describe the potential adaptations.

Hint: Consider different types of environmental changes.

1. Scenario 1

2. Scenario 2