Evolution Unit Test Study Guide

Studying Checklist:

1) _____ Review resources / Powerpoints / videos on Mrs. Kuebler’s website
2) _____ Evolution Pop Quiz and Review Sheet
   - Definitions, Charles Darwin, Lamark, Natural Selection, Adaptations
3) _____ Composition Notebook
   - Natural Selection notes
   - Lamark vs. Darwin
   - Fossils (how they’re formed, relative and radioactive dating)
   - Evidence of Evolution
4) _____ Geologic History Overview worksheet
5) _____ Evidence of Evolution lab
6) _____ Complete this study guide
   - practice questions, vocabulary

Practice Questions:

1) Interpret the diagram and answer the questions.

   • Scientists use _______________________________ to get a general idea of how old one fossil is compared to other fossils.

   • Which fossil is younger, the one at point A or the one at point F?
     ______

   • Which fossil is older, the one at point C or the one at point D?
     ______

2) Scientists use _______________________________ to determine the exact age of a fossil (at least a very close idea).

3) What is the term for the amount of time it takes for 50% of a radioactive element to decay?
   ____________________
4) If a radioactive element has a half-life of 20 million years, and there is 6.25% of it remaining in a rock, how old is the rock?

5) The half-life of a radioactive element is 150 years. In a certain fossil, there is 25% of the original element. How old is the fossil?

6) What is the adaptation at work here? Is it a trait worthy of being passed on?

Look at each picture and then identify which type of evidence for evolution the picture represents.

7) ____________________ 8) ____________________ 9) ____________________

10) Which of the following specifically supports the idea that we share a common ancestor with other animals?
    a. Fossil evidence indicates that species have changed over time.
    b. Radioactive dating indicates that the Earth is over 4 billion years old.
    c. We have the same bone structure as other organisms.
    d. Individuals from the same species can look different from one another.

*** 11) Why are bat wings and whale flippers considered analogous to one another?
    a. They both have the same basic bone structure.
    b. Although they are similar, they are both used for different functions.
    c. Their common ancestor had a similar bone structure.
    d. The question is written incorrectly. These limbs are homologous to one another, NOT analogous!
**Evolution Vocabulary**
Match each term on the left with its description on the right.

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Charles Darwin</td>
<td>any difference between individuals of the same species</td>
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<tr>
<td>species</td>
<td>group of similar organisms that can mate with each other &amp; produce fertile offspring</td>
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<tr>
<td>evolution</td>
<td>a well-tested concept that explains a wide range of observations</td>
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<tr>
<td>overproduction</td>
<td>when a species produces far more offspring than can possibly survive</td>
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<tr>
<td>variation</td>
<td>scientist who developed the Theory of Natural Selection</td>
</tr>
<tr>
<td>scientific theory</td>
<td>gradual change in a species over time</td>
</tr>
<tr>
<td>natural selection</td>
<td>similar body structures that related species have inherited from a common ancestor</td>
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<tr>
<td>adaptation</td>
<td>early stages of development of an organism (before it is born)</td>
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<tr>
<td>embryology</td>
<td>process by which individuals that are better adapted to their environment are more likely to survive &amp; reproduce</td>
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<tr>
<td>homologous structures</td>
<td>diagram that shows how scientists think different groups of organisms are related</td>
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<tr>
<td>branching tree</td>
<td>trait that helps an organism survive &amp; reproduce</td>
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Name: ____________________

**fossil**
- hollow space in rock in the shape of an organism

**fossil record**
- when the remains of an organism have been turned into rock

**petrified fossil**
- when many types of organisms become extinct at the same time

**mold**
- the millions of fossils that scientists have collected

**cast**
- when no members of a species are still alive

**mass extinction**
- preserved remains or traces of an organism that lived in the past

**extinct**
- filled-in mold; when a mold is filled with hardened minerals

**geologic time scale**
- earth's atmosphere formed, bacteria and eukaryotic cells appear

**Precambrian era**
- period of time when dinosaurs ruled the earth

**Paleozoic era**
- era that began with the extinction of dinosaurs; represented with large mammals and humans

**Mesozoic era**
- calendar of Earth's history, divided into eras & periods

**Cenozoic era**
- this era (dominated by fishes and sea creatures) is the beginning of complex life and is marked by the "Cambrian Explosion"
Evolution Equations
Fill out the boxes in the equations using the given terms.

Inherited Variations + Limited Resources (food, water, habitat, mates) + Overproduction → Competition

Evolution

Explain How These 4 Factors Collectively Lead to Evolution:

Overproduction
Genetic Variations
Adaptations
Selection

______________________________
______________________________
______________________________
______________________________
______________________________