

Unit 8 Topic Reviews

Topic 1: History of Life

1. Define biogenesis:

2. Define spontaneous generation:

3. Complete the following table:

Individual	In Support of:	Describe or draw the setup:
<i>Francesco Redi</i>		
<i>John Needham</i>		
<i>Lazarro Spallanzani</i>		
<i>Louis Pasteur</i>		

4. Explain the importance of Miller and Urey’s experiment (what did they demonstrate):

5. How did Miller and Urey simulate lightning in their chamber? _____

6. How old is Earth? _____

7. What type of cell evolved first and when? _____

8. What organism began adding oxygen to earth’s early atmosphere?

a. What evidence supports this theory?

10. Compare and contrast absolute dating with relative dating:

11. What animal life dominated the Paleozoic Era? _____

12. What animal life dominated the Mesozoic Era? _____

13. What animal life dominated the Cenozoic Era? _____

14. What is an angiosperm? _____

a. Why is it important?

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Topic 2: Evolution

Define evolution: The _____ in _____ over time.

What is a population? _____

Subtopic 1: Lamarck and Darwin's Theories

Scientist	Theory (name and description)	Example
Jean Baptiste Lamarck		
Charles Darwin		

How are Darwin's finches related to evolution?

Subtopic 2: Evidence for Evolution

Evidence	Picture	Describe
Fossils		<p>What is a fossil?</p> <p>What can we learn from them?</p>
Comparative Anatomy		<p>Define and provide an example of...</p> <ol style="list-style-type: none"> Homologous Structures: Analogous Structures: Vestigial Structure

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Comparative Biochemistry	Species	Sequence of Amino Acids in the Same Part of the Hemoglobin Molecules	<p>What is comp. biochemistry?</p> <p>How can you tell if organisms are closely related or not?</p>
	Human	Lys-Glu-His-Iso	
	Horse	Arg-Lys-His-Lys	
	Gorilla	Lys-Glu-His-Lys	
	Chimpanzee	Lys-Glu-His-Iso	
	Zebra	Arg-Lys-His-Arg	
Comparative Embryology			<p>Define Embryo:</p> <p>What do you look for in comp. embryo?</p>

Subtopic 3: Speciation

- Define species:

- What is speciation?

 - Compare geographic isolation and reproductive isolation:

 - Compare gradualism with punctuated equilibrium:

 - Coevolution (define and example):

 - Contrast Convergent and Divergent evolution:

 - Adaptive radiation (define, example):

- Explain artificial and sexual selection:

- Discuss the three types of natural selection (stabilizing, directional, disruptive) and draw an image for each:

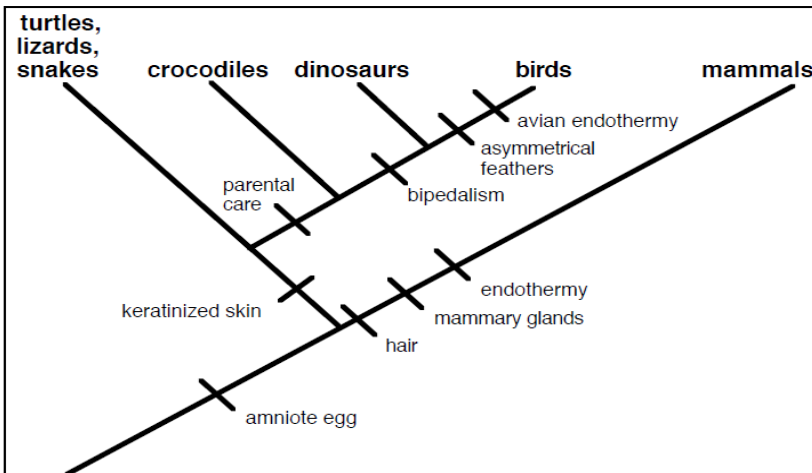
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Topic 3: Classification

1. The science of classifying organisms into groups according to their characteristics and evolutionary history is called _____.
2. The man who developed the binomial system of classification was _____. Why is the term “binomial” used?
3. The scientific name of the common dog is *Canis familiaris*. Identify the genus and species of the dog.
4. Identify Linnaeus’s 7 levels of classification from most broad to most specific.

5. Use the following dichotomous key to name the following everyday objects
 - a. Eraser =
 - b. Unsharpened Pencil =
 - c. Die =
 - d. Small Paperclip =

- | | |
|--|---------------|
| 1a. Item is 10 cm or more in any dimension..... | go to 2 |
| 1b. Item is less than 10 cm in any dimension | go to 5 |
| 2a. Item has wooden parts | go to 3 |
| 2b. Item does not have wooden parts | go to 5 |
| 3a. Item has a pointed edge | Widget |
| 3b. Item does not have a pointed edge | go to 4 |
| 4a. Item is flat | Gadget |
| 4b. Item is rounded | Wadget |
| 5a. Item has a spherical shape | go to 6 |
| 5b. Item is not spherical | go to 7 |
| 6a. Item is white in color | Whatnot |
| 6b. Item is not white in color | Fancy Whatnot |
| 7a. Item is a writing instrument..... | go to 8 |
| 7b. Item is not a writing instrument | go to 9 |
| 8a. Item is white in color | Screacher |
| 8b. Item is not white in color | Squealer |
| 9a. Item is partly or completely made of metal | go to 10 |
| 9b. Item does not have metal parts | go to 11 |
| 10a. Item is more than 3 cm in length | Super Duper |
| 10b. Item is less than 3 cm in length | Itsy Bitsy |
| 11a. Item is soft or flexible | Oopsey |
| 11b. Item is not soft or flexible | Cubey |



6. 7. According to the cladogram, which character evolved first: the amniote egg or hair?

7. 8. On the cladogram, circle the point (i.e. node) that represents the most recent common ancestor of crocodiles, dinosaurs and birds.

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8. List two characteristics for each of the **six kingdoms of life** given below.

Kingdom	Characteristics
Archaeobacteria	
Eubacteria	
Protista	
Fungi	
Plantae	
Animalia	