

# CLADOGRAM ANALYSIS

What is a cladogram? It is a diagram that depicts evolutionary relationships among groups. It is based on **PHYLOGENY**, which is the study of evolutionary relationships. Sometimes a cladogram is called a phylogenetic tree (though technically, there are minor differences between the two).

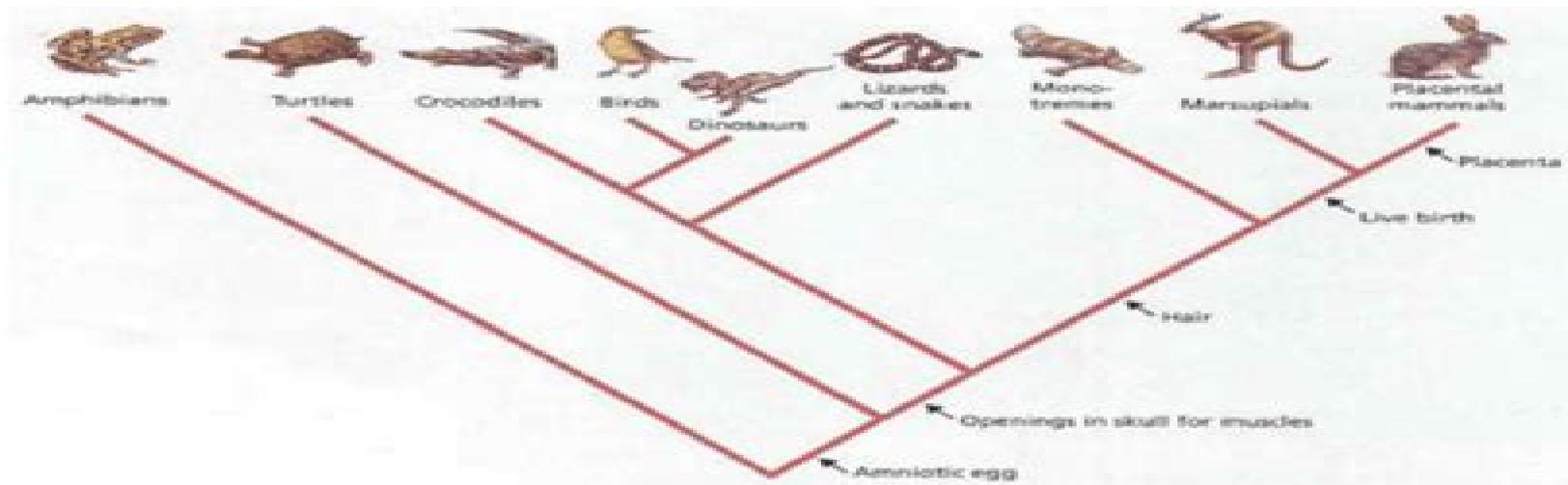
In the past, biologists would group organisms based solely on their physical appearance. Today, with the advances in genetics and biochemistry, biologists can look more closely at individuals to discover their pattern of evolution, and group them accordingly - this strategy is called **EVOLUTIONARY CLASSIFICATION**

**CLADISTICS** is form of analysis that looks at features of organisms that are considered "innovations", or newer features that serve some kind of purpose. (Think about what the word "innovation" means in regular language.) These characteristics appear in later organisms but not earlier ones and are called **DERIVED CHARACTERS**.

## PART I - Analyze the Cladogram

Using the cladogram, decide which animal group have or do not have the derived character.

(A hint to get you started: the **AMPHIBIAN** clade or branch branched off the cladogram, **BEFORE** the character of an **AMNIOTIC EGG**, therefore they **DO NOT** have amniotic eggs)



1. Which animal groups have **AMNIOTIC EGGS**? \_\_\_\_\_

2. Do turtles have **OPENINGS IN THE SKULL FOR MUSCLES**? \_\_\_\_\_

# Biology Lab Cladogram Answers

**Mark Anestis, Kellie Ploeger Cox**



## **Biology Lab Cladogram Answers:**

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## **Table of Contents Biology Lab Cladogram Answers**

1. Understanding the eBook Biology Lab Cladogram Answers
  - The Rise of Digital Reading Biology Lab Cladogram Answers
  - Advantages of eBooks Over Traditional Books
2. Identifying Biology Lab Cladogram Answers
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Biology Lab Cladogram Answers
  - User-Friendly Interface
4. Exploring eBook Recommendations from Biology Lab Cladogram Answers
  - Personalized Recommendations
  - Biology Lab Cladogram Answers User Reviews and Ratings
  - Biology Lab Cladogram Answers and Bestseller Lists

5. Accessing Biology Lab Cladogram Answers Free and Paid eBooks
  - Biology Lab Cladogram Answers Public Domain eBooks
  - Biology Lab Cladogram Answers eBook Subscription Services
  - Biology Lab Cladogram Answers Budget-Friendly Options
6. Navigating Biology Lab Cladogram Answers eBook Formats
  - ePub, PDF, MOBI, and More
  - Biology Lab Cladogram Answers Compatibility with Devices
  - Biology Lab Cladogram Answers Enhanced eBook Features
7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Biology Lab Cladogram Answers
  - Highlighting and Note-Taking Biology Lab Cladogram Answers
  - Interactive Elements Biology Lab Cladogram Answers
8. Staying Engaged with Biology Lab Cladogram Answers
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Biology Lab Cladogram Answers
9. Balancing eBooks and Physical Books Biology Lab Cladogram Answers
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Biology Lab Cladogram Answers
10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Biology Lab Cladogram Answers
  - Setting Reading Goals Biology Lab Cladogram Answers
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Biology Lab Cladogram Answers
  - Fact-Checking eBook Content of Biology Lab Cladogram Answers
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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