



## T. Rex Cladogram Webquest

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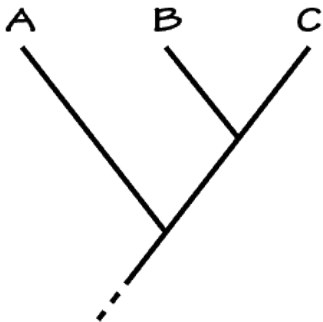
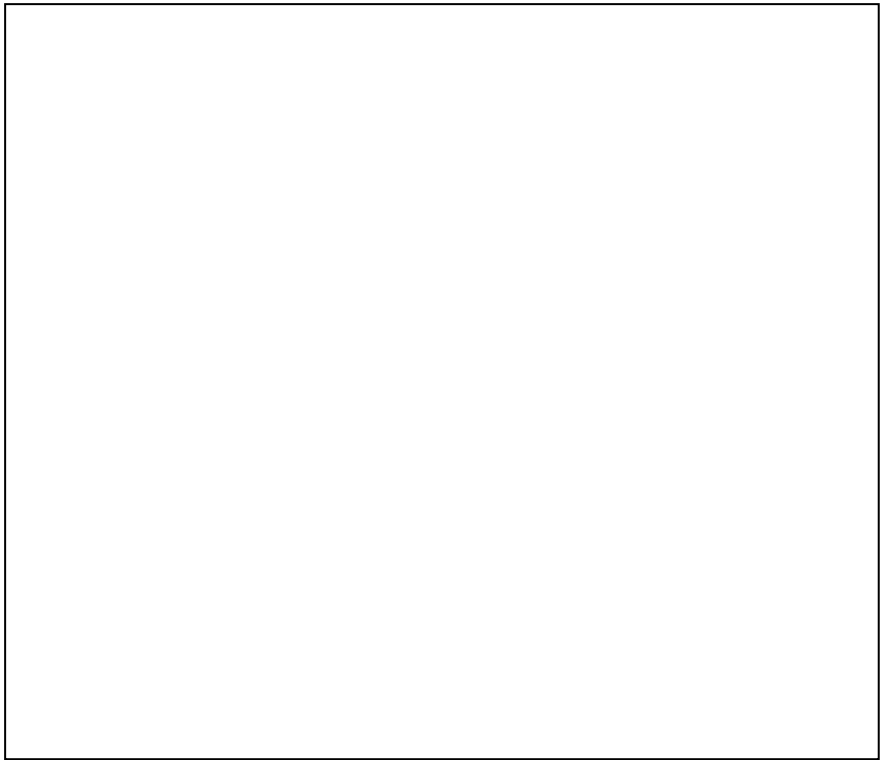
Directions: Go to my website & under AP Biology links, choose the Cladogram Webquest. Then Click on Student Start. Then click on Go to the Beginning. Follow the instructions on the webquest.

### Folder 1

1. How long have bacteria been around?
2. What kinds of environments do Archea live in?
3. Describe Eukaryota.
4. All life is related and can be traced back through lineages to a \_\_\_\_\_  
\_\_\_\_\_.
5. Who did Max inherit a widow's peak from?
6. Just as we traced this family history, we can trace the history of life back  
\_\_\_\_\_ to the point where all life shared a common ancestor.
7. Lineage might have been a new term for you. Which is the best definition for lineage?
8. Within this folder, you compared the history of a single family to the history of all life. What are some things that they have in common?

**Folder 2**

- 9. In the box on the right, draw the cladogram of the caiman and the parrot. Add in/ write in the distinct histories, shared history & common ancestor.
- 10. On the cladogram you drew, label the common ancestor of the tuna & parrot with the letter B.
- 11. On the cladogram below, label the common ancestor of A & C with the number 1 and the common ancestor of B & C with the number 2.
- 12. On the cladogram below, circle the shared history of A, B & C and square the unique history of B.



**Folder 3**

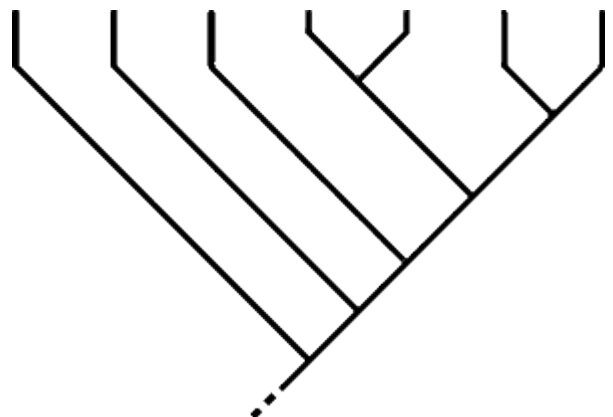
13. Which is more closely related to caimans—hares or parrots?

14. Cladograms represent \_\_\_\_\_ about evolutionary relationships—who is more closely related to whom.

15. On the cladogram on the right, label the lettered traits.

16. Which feature do humans, hares, caimans, and parrots share that the other three lineages did not inherit?

17. So how do we know the skull openings were present in the common ancestors if we can't see them today?



**Folder 4**

Click on each character to fill in the table, starting with the vertebrae. You can update your table as we go along.

	shark	tuna	frog	human	hare	caiman	parrot	T. rex
vertebrae	<input type="text"/>							
bony skeleton	<input type="text"/>							
four limbs	<input type="text"/>							
amniotic egg	<input type="text"/>							
hair	<input type="text"/>							
opening in front of eye	<input type="text"/>							

18. What if we look at the skull opening in front of the eye — can we narrow down our search to two vertebrate lineages that might be most closely related to *T. rex*?

	caiman	parrot	T. rex
19. Our evidence indicates that <i>T. rex</i> shares more features with _____ than with the other groups of animals.	vertebrae	<input type="text"/>	<input type="text"/>
	bony skeleton	<input type="text"/>	<input type="text"/>
	four limbs	<input type="text"/>	<input type="text"/>
20. What did the T. Rex taste like?	amniotic egg	<input type="text"/>	<input type="text"/>
21. What evidence did we use to determine this?	hair	<input type="text"/>	<input type="text"/>
	opening in front of eye	<input type="text"/>	<input type="text"/>
22. Because <i>T. rex</i> was bipedal and had a reduced number of fingers, we can infer:	heel	<input type="text"/>	<input type="text"/>
	bipedal	<input type="text"/>	<input type="text"/>
	4 <sup>th</sup> and 5 <sup>th</sup> finger lost	<input type="text"/>	<input type="text"/>

## Folder 5

**In the space provided below, examine two of the bulleted questions below and make inferences about T.Rex.**

### **Questions:**

- Did T. rex have an amniotic egg?
- Was T. rex warm-blooded or cold-blooded?
- Could T. rex have had feathers?
- Did T. rex have color vision?
- How many chambers were there in T. rex's heart?
- Did T. rex sing to its offspring?

### **Using your completed features table and cladogram with addition data:**

1. Decide if it is possible to answer the question with the data provided (the cladogram and data tables).
2. If it is not possible, what information is needed to be able to answer the question?
3. If it is possible, what kind of hypothesis would you make? What is the evidence for your statement? In your justification, make sure that you include information about common ancestors and shared inherited features. What other evidence would you look for that would support or refute your hypothesis?
4. What other kinds of questions might be answered using the cladogram and data tables?  
\*Additional data needed to answer the questions is on my website under AP handouts\*