

QUICK LAB DIRECTED Inquiry

Genetic Evidence for Evolution

In this lab, you will investigate a method for using DNA to infer how species are related. Using the DNA sequences provided, you will draw an evolutionary tree showing the relationships between several organisms.

PROCEDURE

- The table below shows one section of the same gene found in five different organisms. The organisms are labeled A, B, C, D, and E. What clue shows that this DNA is from the same gene in all of these organisms? Explain.

OBJECTIVE

- Use similarities and differences in DNA sequences to determine the evolutionary relationships between several organisms.

MATERIALS

- For each student
- paper
 - pencil

A COMPARISON OF DNA SEQUENCES

Species	Sites of differences in genetic sequences				
	1	2	3	4	5
Species A	A	C	A	A	A
Species B	A	C	A	A	A
Species C	A	G	A	A	A
Species D	A	G	T	A	A
Species E	A	G	T	A	A

- Circle all of the places on the table where you think changes have taken place as a result of evolution.
- Based on the changes you noted, name one pair of organisms that are very closely related to one another. Explain why you think so.

- Now name another pair of organisms that are also very closely related to one another.
