

AP Biology

Homeotic Genes and Body Patterns

Name: _____

Date: _____

Period: _____

Directions: Go the website: <http://learn.genetics.utah.edu/content/variation/hoxgenes/>

Use the website to answer the following questions.

1. What is a homeotic transformation? What causes them?

2. What did the work done by Ed Lewis show?

Extra Credit: Where in this building can you find his work?

3. Explain how changes in Hox gene activity can change the structure of the fly.

4. What is a homeobox?

5. What does the universal nature of Hox genes in animals indicate regarding their history and function?

6. What does comparing Hox genes from one species to another indicate to scientists?

7. How do Hox genes regulate the expression of other genes?

8. Why would genetic changes of this nature be passed on to future generations?
9. Why is it difficult to determine the function of Hox genes in vertebrates?
10. Describe the function of the Hox10 paralogs in mice and snakes. What difference does the function of Hox10 create in the two organisms?