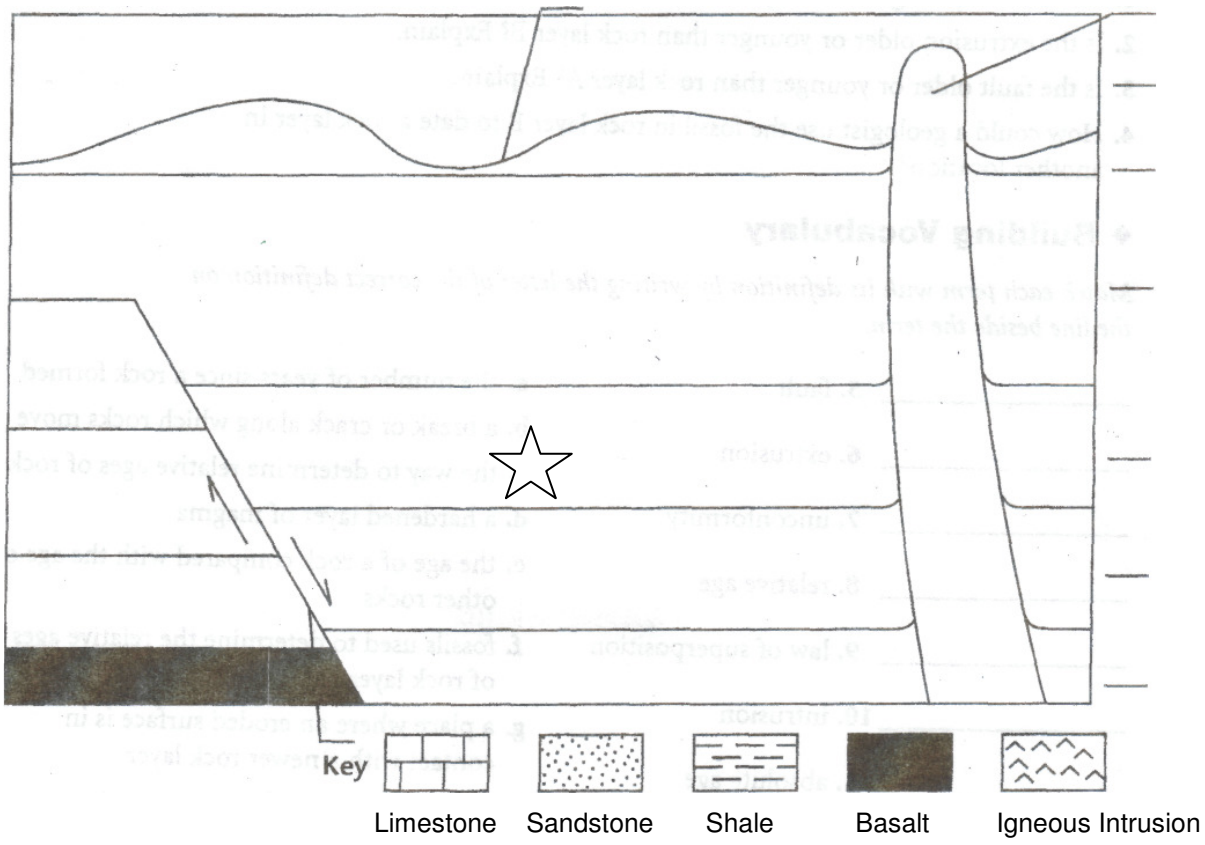
EXPLAIN, Part 2
Handout

Name _____
Date _____

Creating a Rock Sequence

Using the sequence of historical events below, complete the cross-section diagram to show the events according to the principle of superposition. Use the symbols given in the key, and label each layer according to its place in the sequence,

(A) The ocean covers the area; coral thrive and limestone deposits are formed.
(B) Mud washes in and is later pressed into layers forming shale.
(C) Coral thrive again. Limestone forms.
(D) A normal fault occurs.
(E) Sand is deposited and later cemented.
(F) Coral deposits occur, forming limestone.
(G) The entire area is uplifted above the ocean, and the coral-rich limestone erodes.
(H) The area is again covered by the ocean, and mud washes in, forming shale.
(I) A disconformity marks the change from limestone to shale.
(J) Magma moves up through the existing rock layers and crystallizes to form a dike.



Analysis:

1. If a fossil is marked by the star, is the fossil older or younger than the layer above it? The layer below it?

2. How might a scientist determine the age of the rocks using the age of the fossil?

3. What type of dating would be used to determine the age of the rocks by using the fossil?

4. How might scientists use the uranium-238 content to date the rocks? What is this type of dating called?

5. How might scientists use the carbon-14 content to date the fossil? Why is carbon-14 used for fossils and uranium-238 used for rocks?

6. Why is the intrusion considered an unconformity?

7. What other types of unconformities exist?

8. How could chemical and mechanical weathering affect this rock sequence?

9. Which of the types of rock would be most affected by acid rain, a type of chemical weathering?

10. Which of the types of rock would be most affected by intense winds, a type of mechanical weathering?

11. How would continental drift explain this rock sequence being found on both South America and Africa?

12. Would you expect to find a fossil matching the one found in this rock sequence in both places? Justify your answer.