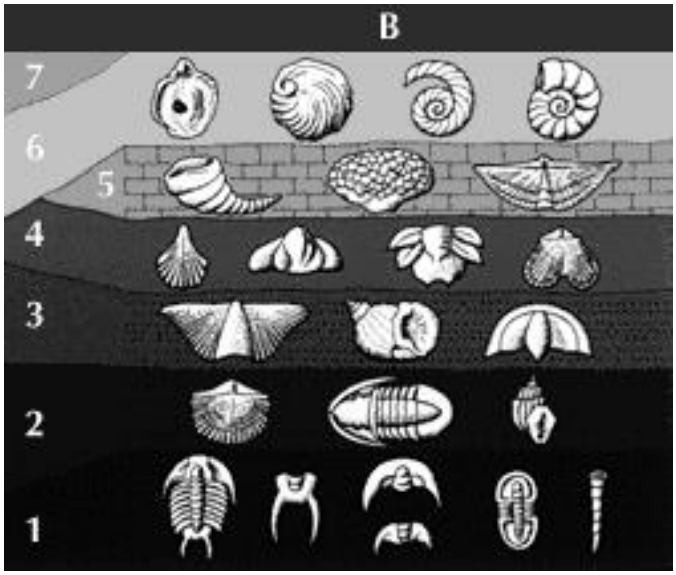
Name: _____

Evidence of Evolution: Fossils, Embryology, and Molecular Record

Background: Much evidence has been found to indicate that living things have evolved or changed gradually during their natural history. The study of fossils as well as work in embryology, molecular DNA, and comparative morphology (anatomy) provides evidence for evolution.

I. Fossils

Study the figure to the right.

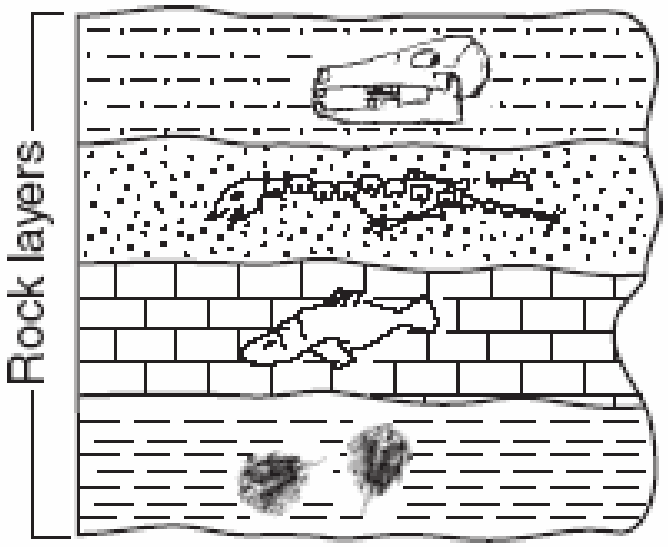


1. Which rock layer is the oldest? _____
2. Which rock layer is the youngest? ____

Study the figure below.

3. How did the types of organisms living in this area change over time?

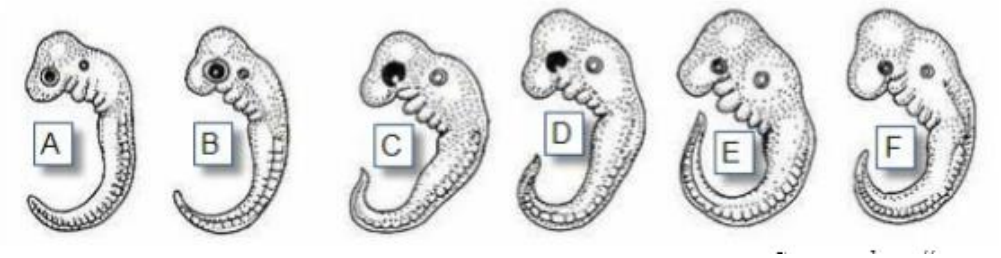
4. What evidence shows the change discussed in your answer to #3?



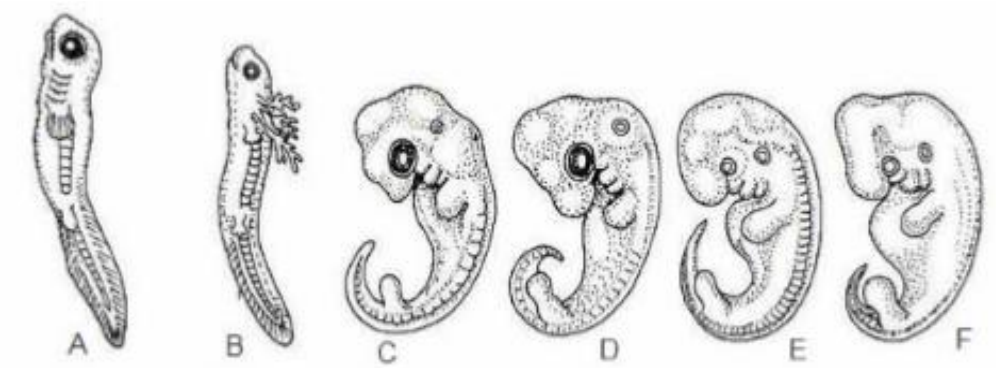
II. Embryology – evidence for common ancestry

Organisms that are closely related may also have physical similarities before they are even born. Take a look at the six vertebrate embryos below as they progress through the stages of gestation. They share the same traits early in development but go through a different developmental pattern.

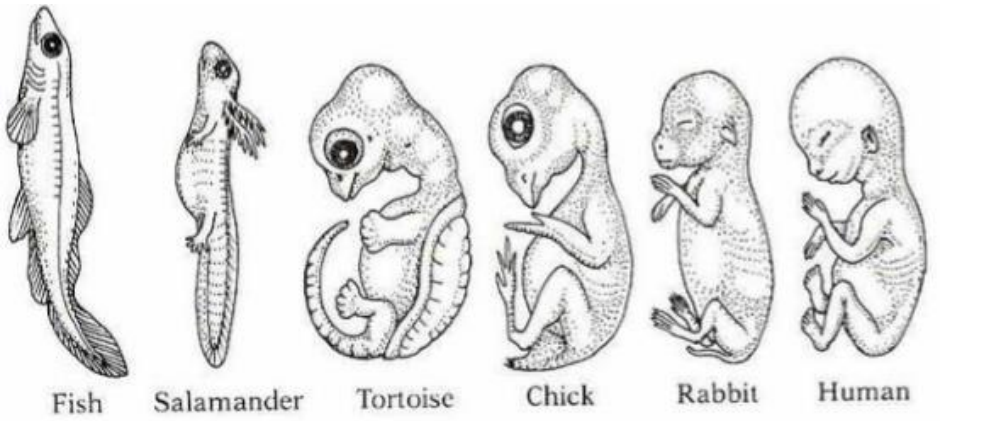
4 weeks gestation



10 weeks gestation



20 weeks gestation



1. Can you easily identify which embryo is the human and which is the salamander just by observing the embryos at 4 weeks gestation? Explain why or why not.

2. Look at the embryos at 4 weeks gestation and describe any patterns that you see. What physical similarities do you observe between the embryos?

3. Does this suggest an evolutionary relationship? Explain how these embryos can be used as evidence of a common ancestor between each of these six organisms.