**Dino Drumsticks: Scientists Grow Dinosaur Legs on Chicken Embryos for the First Time**

*Read and annotate* [*the article*](http://www.techtimes.com/articles/141033/20160315/dino-drumsticks-scientists-grow-dinosaur-legs-on-chicken-embryos-for-the-first-time.htm)*. Then complete the following tasks to support your understanding of ideas and language from the text.*

**Vocabulary**

With a partner, define the key terms below and discuss their connection to the article’s topic.

researchers experiment isolate gene avian dinosaur

dinosaurs breakthrough conduct trait genetic modification

chicken evolution survive embryo evolutionary change

**Comprehension**

With a partner, check your understanding of information presented in the article by answering the following questions.

1. What descendants of dinosaurs are still alive today?
2. Which institution recently studied this evolutionary connection?
3. In what year and in what journal was their study published?
4. What animal did they use to study the evolution of dinosaurs?
5. Which part of the animal was the focus of their study?
6. How did they manipulate the traits of this body part?
7. Was their experiment successful?
8. Will this ancestral trait return as a result of the experiment?

**Discussion**

In a small group, discuss the following questions to examine, evaluate, and expand upon key ideas presented in the article.

1. In this study, researchers manipulated the genes of chickens. In what other ways is genetic modification occurring today?
2. What reactions have GM research and GM products received in the US?
3. What considerations should be made when modifying the genes of a plant or an animal? What concerns may arise?

**Grammatical Analysis**

Review the following sentences from “[Dino Drumsticks: Scientists Grow Dinosaur Legs on Chicken Embryos for the First Time](http://www.techtimes.com/articles/141033/20160315/dino-drumsticks-scientists-grow-dinosaur-legs-on-chicken-embryos-for-the-first-time.htm).” With a partner, determine to what or to whom each underlined word refers.

1. A group of researchers from Universidad de Chile have made a huge breakthrough in showing the evolutionary changes that occurred from dinosaur to bird by making genetic modifications on chicken embryos. Simply put, they are growing a dinosaur leg, which is a first in 65 million years.
2. Previous experiments on chickens have already been conducted to bring out their dormant dinosaur traits.
3. In 2015, the team from Chile was able to make their chicken embryos grow dinosaur-like feet. This new study, which was published in Evolution, tried to isolate a maturation gene called IHH, or Indian Hedgehog, [and] allowed them to make the chicken's fibula grow as long as its tibia.
4. “The experiments are focused on single traits to test specific hypotheses. Not only do we know a great deal about bird development, but also about the dinosaur-bird transition, which is well-documented by the fossil record. This leads naturally to hypotheses on the evolution of development, that can be explored in the lab,” said one of the team members, Alexander Vargas.