**Evolution on Trial: Bird-osaurs**  
Evolution Unit Project - Fall 2014

**The Question:**  
Did birds evolve from dinosaurs?

**Overview:**  
In this project, students will act out different roles in a mock courtroom where a student jury will decide whether birds descended from dinosaurs. Two lawyers on each side will present evidence for their side of the argument. One witness who will act as an “expert” will go on the stand for their side of the case as well. Finally, the jury will discuss both sides and come up with a verdict about whether birds descended from dinosaurs.

**Roles & Expectations**

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| **Role** | **Expectations** |
| Judge | * Maintain order in the courtroom by:   + Stopping side conversations by jury members   + Making sure lawyers are presenting actual evidence that relates to the case   + Calling the court to order   + Giving each side the same amount of time |
| Lawyers | * Present at least 2 scientific arguments for your side that:   + Use evidence from scientific research   + Are logical and prove your side of the argument * Ask at least 2 questions of witnesses that could prove your side effectively * Demonstrate solid understanding of evolution vocabulary and concepts * Both lawyers should participate in the trial |
| Witnesses | * Know at least 3 pieces of evidence about their side of the argument * Work with the lawyers from their side to decide on what questions and answers they will present to the jury * Sound like “experts” on their material * Present scientific arguments based on scientific research |
| Jury | * Take notes during the lawyers arguments * Actively participate in the discussion after lawyers have presented their cases * Listen carefully to both sides of the argument * Make a decision based on the quality of the evidence presented |

**Students will have the opportunity to research this topic for one day in class and for homework. EVERY student should answer the following questions ON A SHEET OF NOTEBOOK PAPER IN THEIR SCIENCE JOURNALS. Please list your sources!:**

1. Scientists have discovered that birds and dinosaurs have similar ankle joints, toes, hips, iliums, and other anatomical features. Why is this evidence that birds came from dinosaurs?
2. Scientists believe that some dinosaurs had four-chambered hearts. Why are four-chambered hearts evidence for birds coming from dinosaurs?
3. Is there any genetic evidence (DNA) that supports either side of the argument?
4. Bird fossils have been found in rock that is older than theropod dinosaur fossils? Why is this evidence against the idea that birds came from dinosaurs?
5. *Archaeopteryx* is a fossil found in Germany in 1861 and is thought to be a “transitional form” between birds and reptiles. Does this fossil support the theory that birds came from dinosaurs? Why or why not?
6. Find 2 more pieces of evidence for each side of the argument.

**Project Timeline**

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| **Date** | **Goals** |
| Tuesday, November 4 | * Student roles assigned * Discuss To Do list with group * Students begin research in class and for **homework** |
| Wednesday, November 5 | * Student research with mobile lab * Finish research questions in class or for **homework** |
| Thursday, November 6 | * Lawyers and witnesses prepare for trial * Jury and judge discuss the answers they found to their research questions in small groups |
| Friday, November 7 | * **Mock trial for entire class period** |

**Grading Rubric:**  
Participation, notes, answers to research questions, verbal arguments, and effort