**Student Worksheet: A peek inside**

**Directions**: Read the *Science News* article “[See 3-D models of animal anatomy from openVertebrate’s public collection](https://www.sciencenews.org/article/3d-animal-anatomy-openvertebrate)” and answer the questions below.

 **A need for models**

1. Watch the video linked in the *Science News* article “[Here’s why pumpkin toadlets are such clumsy jumpers](https://www.sciencenews.org/article/pumpkin-toadlets-jump-brachycephalus).” What aspects of the toad’s behavior in the video may confuse scientists? How could images such as those shared through the openVertebrate project help scientists understand the toad’s behavior?

2. What are the benefits of using CT scan-generated 3-D models of specimens to learn more about animal anatomy? How does this compare with traditional cross-sections viewed by dissection?

3. Describe how the 3-D models of each organism were created.

4. What was one of the challenges scientists faced while developing a method to scan each specimen?

5. Specimens in museum collections are often put on display or used for scientific study. Why might the majority of these specimens be scanned without soaking them in iodine?

6. How will having a freely available repository of 3-D models or CT scans of specimens increase scientific understanding?

**Making observations**

Visit the [openVertebrate Project page](https://www.floridamuseum.ufl.edu/overt/) from the Florida Museum. Go to the Specimen Gallery and click the link taking you to Sketchfab. Once on the Florida Museum Sketchfab page, navigate to the Collections tab and explore the collections “Fish Diversity – CT Scans” and “Herpetology.” Select a specimen in one of these collections that displays internal anatomy. This internal anatomy can include bones, organs, or muscle tissue. Answer the following questions.

1. What collection and specimen did you choose?

2. Take a moment to explore your specimen. The 3-D model is fully navigable. Use the mouse wheel to zoom in and out, the left mouse button to rotate, and the right mouse button to pan or move the image. What do you observe about the specimen you chose?

3. Would you have been able to make all the same observations exploring a physical skeleton of your specimen? Why or why not?

4. Based on your observations, form a scientific question about your organism or specimen.

5. What would you need to investigate or answer your scientific question?