Student Handout

# BEHIND THE SCENE: SCIENCE NOTES

During the making of the film *Sea Monsters: A Prehistoric Adventure*, scientific advisors reviewed storyboards to ensure the film was science-based. Below is a storyboard with scripted voiceover (VO) and notes from Dr. Ken Carpenter, a paleontologist with the Denver Museum of Nature & Science.

**Step 1: Review the scientific notes.** Which are examples of evidence? Which are inferences based on the evidence?

**Step 2: On a separate piece of paper, make a chart with two columns labeled "Evidence" and "Inference."** List examples of evidence from the notes. Across from each example of evidence, write the inferences based on it (sometimes there is more than one). Hint: there are seven examples of evidence and ten examples of inference.

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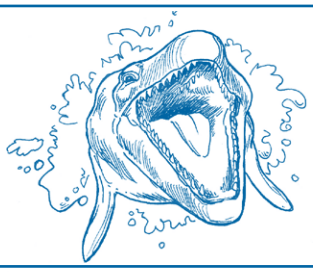
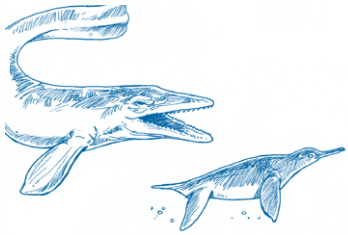
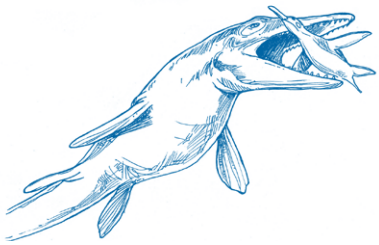
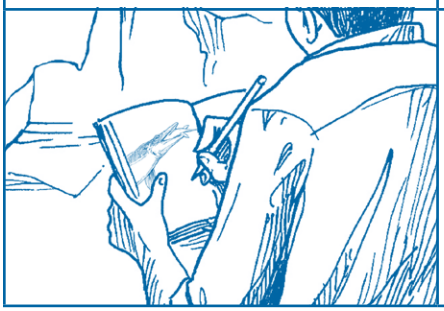
|  | **VO:** They had found a monster's last meal – entombed within its ribs.<br><br>**Notes:** *Based on Sternberg find in 1918 – a Dolichorhynchops (nicknamed "Dolly") within the ribs of a Tylosaurus (we'll call "Tylo"). Since only the skeleton of the Tylo remains, we assume the region is where the stomach was, but can't say for sure.* |
|  | **VO:** The *Tylosaurus* can open its mouth wide enough to swallow prey whole, like a snake.<br><br>**Notes:** *Tylo lacked hands to hold prey. Thus, it had to either bite and shake large chunks out of prey, or swallow prey whole. Like snakes, Tylo had two rows of teeth way back on the roof of the mouth. Like snakes, we believe it used these teeth to help swallow prey.* |
|  | **VO:** Because Dollies are fast, a *Tylosaurus*' best bet is to catch one by surprise.<br><br>**Notes:** *Dolly had a short, rigid body and long flippers. Flippers may have worked like wings to help it "fly" under water—similar to a penguin. Tylo had a long body and tail. It probably swam with an eel-like movement. Thus we suppose it was a much slower swimmer than Dolly.* |
|  | **VO:** The female escapes...but her brother doesn't see the danger coming.<br><br>**Notes:** *Because Tylo was a slower swimmer there were probably two ways it might have caught Dolly to eat it: either Dolly was dead (and Tylo scavenged) or Tylo made a surprise attack. We can see from Dolly skeletons that its blind spot was immediately behind and below its body. We can assume that could have been the direction of a surprise attack.* |
|  | **VO:** The Sternbergs had discovered a life-and-death moment...a story locked in time of two ancient lives intersecting.<br><br>**Notes:** *Fossil skin impressions show Tylo had very small, overlapping, lizard-like scales. Unfortunately, these impressions do not indicate skin color. We don't know the true color of any marine reptiles. Since most large marine animals are drab and/or dark, we assume the same might have been true for Dolly and Tylo.* |