

FOUNDATIONS

1. The theory of evolution explains much of what we see in today's plants, animals, and fungi, and what we observe in the fossil record. Watch the video on evolution and look at the display cases. **What are the five pieces of evidence for evolution? Pick one to explain in detail.**

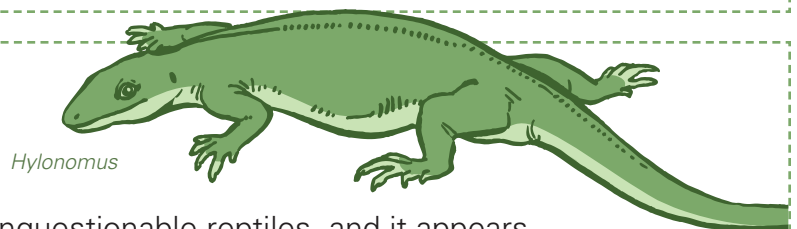
EVIDENCE FOR EVOLUTION	
1.	3.
2.	4.
5.	

2. Taphonomy is the study of how animal remains become fossils. Visit the *Science in the Rocks* and *Fossils and Fossilization* (orange) sections of the *Foundations* gallery. There are multiple types of fossils, and multiple ways that fossils can form.

After reading the displays or watching the video, pick a fossil in *Foundations* to **draw** and **hypothesize how it was fossilized**, either in terms of the fossilization process, or the story of how the organism(s) may have died.

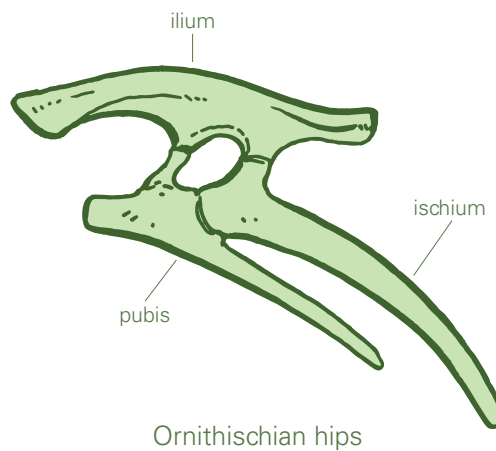
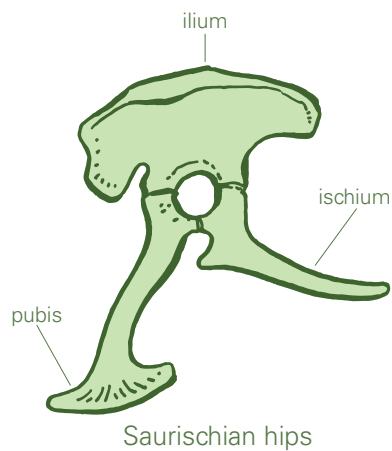
DEVONIAN REEF

5. Alberta was covered by a warm shallow sea during the Devonian Period (419 – 359 million years ago). The animals living in this sea had a number of physical adaptations that helped them survive and thrive in their aquatic environment. **Draw two animals** that you see in the Devonian Reef diorama and **label any adaptations** that helped them live successfully in the ancient shallow seas.



PERMIAN

6. *Hylonomus* is one of the earliest unquestionable reptiles, and it appears in the fossil record approximately 312 million years ago during the Late Carboniferous. Take a close look at the cases of skulls past the arthropod enclosures. These skulls represent amphibians, reptiles, and their relatives. The evolution of reptilian eggs allowed tetrapods (animals with four legs) to become more successful on land. **How do reptilian eggs differ from amphibian eggs?**

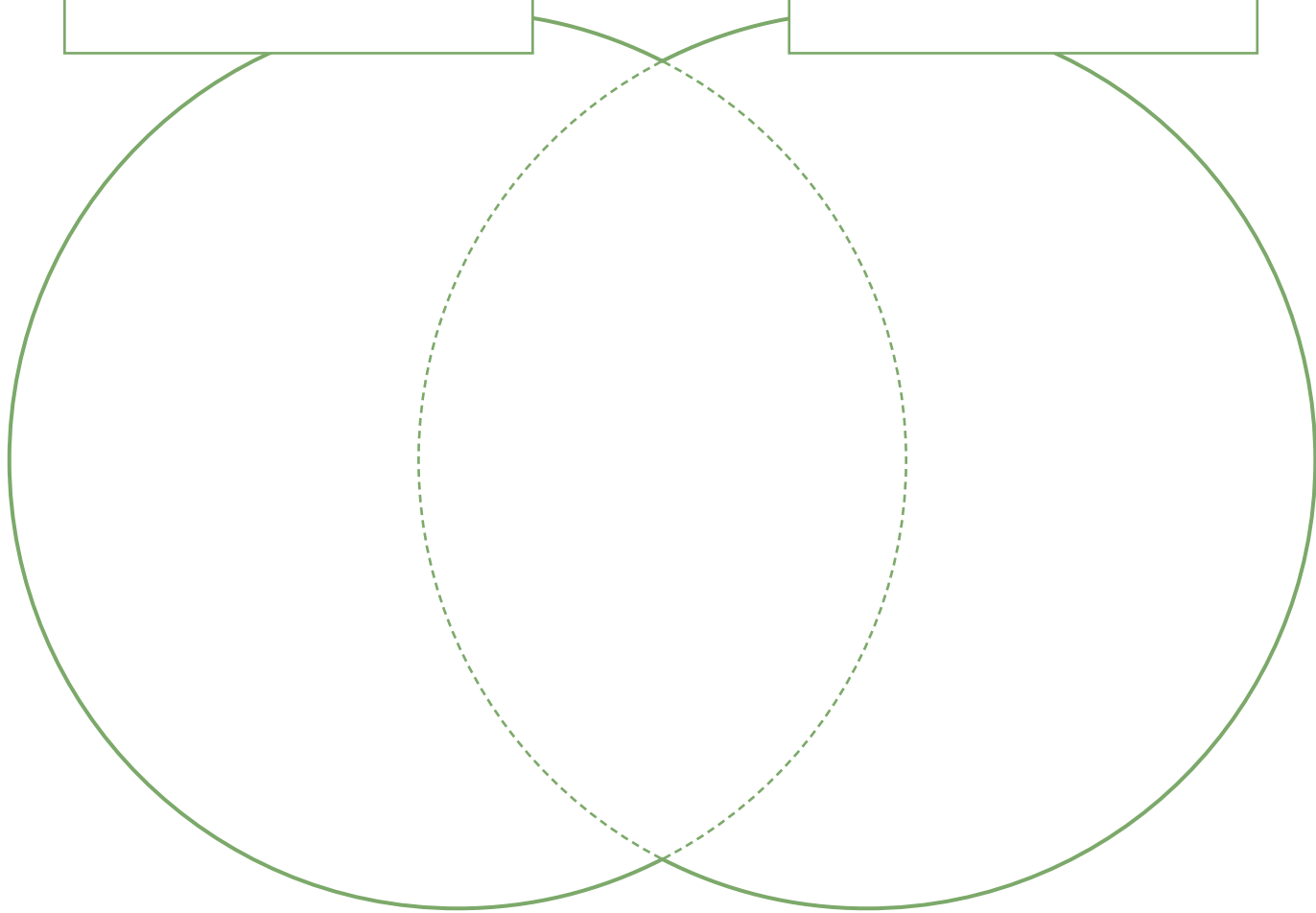


DINOSAUR HALL

7. Dinosaurs are divided into two major groups: ornithischians (“bird-hipped”) and saurischians (“lizard-hipped”). They are differentiated by the position of the three bones in their hips—the ilium, the ischium, and the pubis. Find one ornithischian and one saurischian in *Dinosaur Hall*; **compare and contrast their skeletal features.**

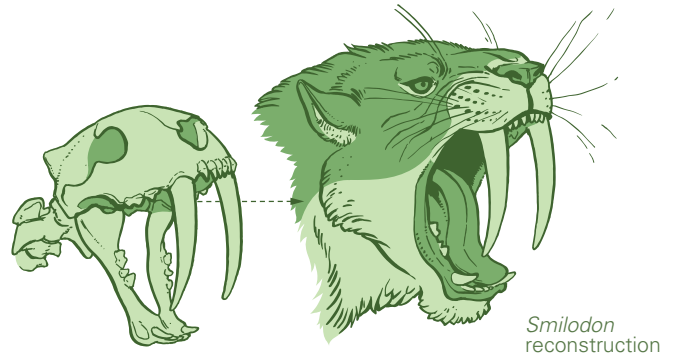
ORNITHISCHIAN DINOSAUR:

SAURISCHIAN DINOSAUR:



PALAEO ART

- Palaeoartists bring prehistoric creatures back to life by examining fossils and their modern relatives to make scientifically informed illustrations. Artists often work closely with scientists, studying comparative anatomy, biomechanics, and current palaeontological theories to make the most accurate image they can.



This can prove difficult as they often only have incomplete skeletal remains to work from, and the process of fossilization often deforms the bones.

Choose a fossil animal that is on display at the Museum and **sketch how you think it would have looked when it was alive.**

CENOZOIC: THE RISE OF MAMMALS

- All life began in the water. Eventually, many animals moved from living in water to living on land. Some even returned to the water. Living in an aquatic environment has benefits and disadvantages.

After examining the marine mammals section of the exhibit, and learning about the evolution of whales, can you think of a terrestrial animal that might venture into the water? What kind of adaptations might they develop to thrive in an aquatic environment? How would adapting to the water be useful in the future?

Sketch your hypothetical aquatically adapted animal.