

Dinosaurs and Mammals Level 2

 Gallery Search

 Important Facts

Diversity of Mammal Life



 Find *Desmostylus*, an extinct mammal from the Cenozoic era (65 million years ago - present).

 *Desmostylus* has no living relatives.

Mammal life greatly diversified during the Cenozoic era. All mammals are classified as being in kingdom animalia and phylum chordata.

Class mammalia is further divided into 29 orders. Animals belonging to the same order have many features in common.

Find the extinct Cenozoic relatives belonging to the same order as the following living mammals:

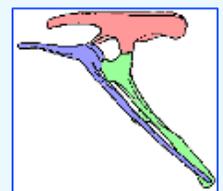
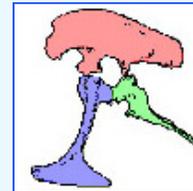
- Tree sloth
- Elephant
- Armadillo
- Grizzly Bear
- Beaver

Which living mammals do scientists use to try and understand *Desmostylus*?

What comparisons can you make between the anatomy of ice age mammals and today's mammals?

How would these trends have aided survival during the ice age?

Dinosaur Orders



 Look at the saurischian and ornithischian dinosaur pelvis forms. The blue bone is the pubis.

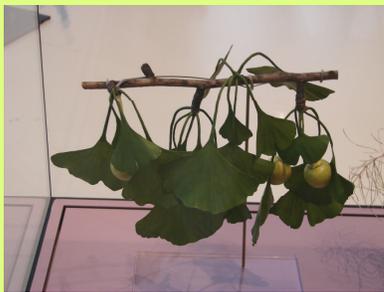
Dinosaurs are divided into two orders based on the shape of their pelvis.

Find the following dinosaurs; are they ornithischian or saurischian?

- Albertosaurus* _____
- Ornithomimus* _____
- Lambeosaurus* _____
- Plateosaurus* _____
- Camptosaurus* _____
- Barosaurus* _____

Diversity of Plant Life

 Find the ginkgo.



Plant life rapidly evolved and flourished during the Mesozoic era.

 Angiosperms (flowering plants) did not evolve until the Cretaceous period.

Find and sketch the following Jurassic fossil plants:

Ginkgo

Cycad

Horsetail



What reproductive structures do you see on plants like ferns, cycads, and conifers?

What advantages do angiosperms have over non-flowering plants?

Birds are Descendents of Dinosaurs



Look at the pelvis on *Bambiraptor* and compare it to the pelvis of the Great Blue Heron.

Circle the order of dinosaur from which birds evolved.

Ornithischian

Saurischian

 Find *Bambiraptor*.

Large dinosaurs like *T. rex* went extinct 65 mya, while birds survived. What characteristics helped birds survive?

Compare and contrast other skeletal features of the Great Blue Heron and the *Bambiraptor*.

Similarities

Differences

 At the far left is *Hesperornis*, an extinct flightless bird. All that remains of its "wing" is a vestigial bone. It was a specialized diving bird something like penguins today.

Birds and Hands-On Biodiversity Level 2

 Gallery Search

 Important Facts

Adaptations to Flight



Birds have evolved many features for a life of flight.

Search to find four features that help support flight (open drawers).

 Find the Common Loon.

Of today's animals, feathers are unique to birds and serve many functions. Look around the gallery (open drawers) and list three different functions of feathers.

 Unlike other flying birds the Common Loon has solid bones! So does the Ostrich. This is an example of convergent evolution.

Why did the adaptation of solid bones evolve in these species?

Sexual Dimorphism in Birds

Sexual dimorphism is the differences in form between males and females of the same species.

Find the following birds in the gallery, and using the descriptions provided, circle whether our specimens are male ♂ or female ♀.

Wild Turkey

- ♂ feathers are red, purple, green, bronze
- ♀ feathers are brown

Magnificent Frigate Bird

- ♂ scarlet red throat patch
- ♀ white breast

Canvasback Duck

- ♂ red head, black breast, whitish body
- ♀ head and body are brown

Why might the males and females of a species have different feather colouration?

Invasive Species

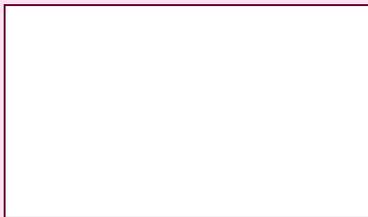
Invasive species are non-indigenous plants and animals that have harmful effects on the habitats where they have been introduced. Many invasive species in the Great Lakes arrived in ballast water discharged by ships from around the world.

Locate the following invasive species. Sketch or describe them, and explain how they might harm the local habitat into which they were unwittingly introduced.



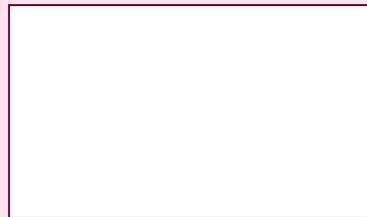
 Find the Great Lakes Marsh and the live fish tank. Inside the tank is the Round Goby. Nearby you will find other invasive species.

Sea Lamprey



Effect on Habitat

Purple Loosestrife



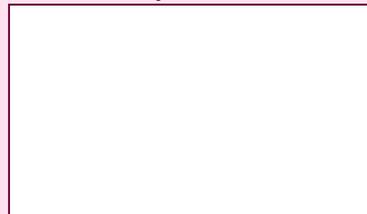
Effect on Habitat

Zebra Mussel



Effect on Habitat

Round Goby



Effect on Habitat
