Gallery

Family Guide

A CHANGING WORLD

MUSEUM
OF TEXAS TECH
UNIVERSITY

HERE ARE SOME IMPORTANT FACTS TO KNOW BEFORE YOU BEGIN YOUR TOUR OF THE GALLERY:

- Dinosaurs lived 228-65 million years ago.

- The **Mesozoic** Era (MES-OH-ZOH-IK) is also known as the "Age of Dinosaurs." The Mesozoic Era is divided into three periods: **Triassic**, **Jurassic**, and **Cretaceous**. If you look around the gallery, you will see hanging banners marking the three time periods of the Mesozoic Era.

- *Check out the Omni Globe!*
  Here you can study the movement of continents through each geologic period. In the age of the dinosaurs, there was one supercontinent called **Pangaea**, which broke up into small continental fragments in the late **Jurassic**. Throughout **Cretaceous** as continents moved apart, dinosaurs became separated and evolved differently.

PANGEA

EURASIA

NORTH AMERICA

SOUTH AMERICA

AFRICA

ANTARCTICA

AUSTRALIA

This gallery guide is intended to be completed as a family. You may read the information to your child or have your child read it to you. Discuss the questions together and ask your kids to answer the questions. Important words and dinosaur names are in bold type. To supplement this guide, encourage further investigation at home!
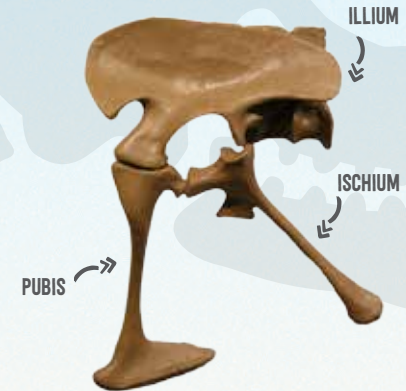
DINOSAUR FAMILY TREE
HOW ARE DINOSAURS CLASSIFIED?

Dinosaurs are grouped into two different categories based on the orientation of their two lower hip bones. These bones are called the **pubis** (PYOO-bis) and **ischium** (IS-kee-uhm).

ILLIUM

ILLIUM

ISCHIUM

ISCHIUM

PUBIS

PUBIS

Ornithischia "Bird-Hip"
Both lower hip bones (ischium and pubis) point backwards as in birds

Saurischia "Lizard-Hip"
Only one lower hip bone points backward (ischium); Pubis points forward as in lizards, but away from ischium

Hallmark of a Dinosaur! All dinosaurs have a hole in their hip socket. This is how you can tell the difference between a dinosaur and a non-dinosaur.

DO YOU WANT TO BE A PALEONTOLOGIST?

POST

DALLAS/ FORT WORTH

BIG BEND

Here are 3 places in Texas where dinosaur fossils can be found. Look at the map to see where they are located.

TEST YOUR KNOWLEDGE

1. What is the Mesozoic Era known as?
2. Name the three Periods of the Mesozoic Era.
3. What is the name for a scientist who studies dinosaurs?
4. Which university is Technosaurus named for?
5. Which dinosaur had a long neck to reach food high in the trees? *(Answers can be found on last page)*

TECHNOSAURUS SMALLI
(TECH-NO-SAWR-US SMALL-EYE)

Paleontologists (pey-lee-uhn-tol-uh-justs) are scientists who study fossils of animals to learn what the earth was like many years ago. Paleontology is the study of fossils and ancient life forms. **Paleontologists** from Texas Tech University discovered **Technosaurus** right here in Texas. Technosaurus was named for Texas Tech University.

Technosaurus smalli was a small non-dinosaurian (more like a cousin of a dinosaur) **Dinosauriforme** about six feet long. When a new taxon is found, the paleontologist who studies the specimen can name it. Like people, taxa have two-part names: the first name (genus) is in honor of Texas Tech University; and the second name (species) is for the Texas Tech student who found it. Few universities have a taxon named for them; Technosaurus is known only from jaw fragments. Its teeth are leaf shaped, typical of many plant eaters.
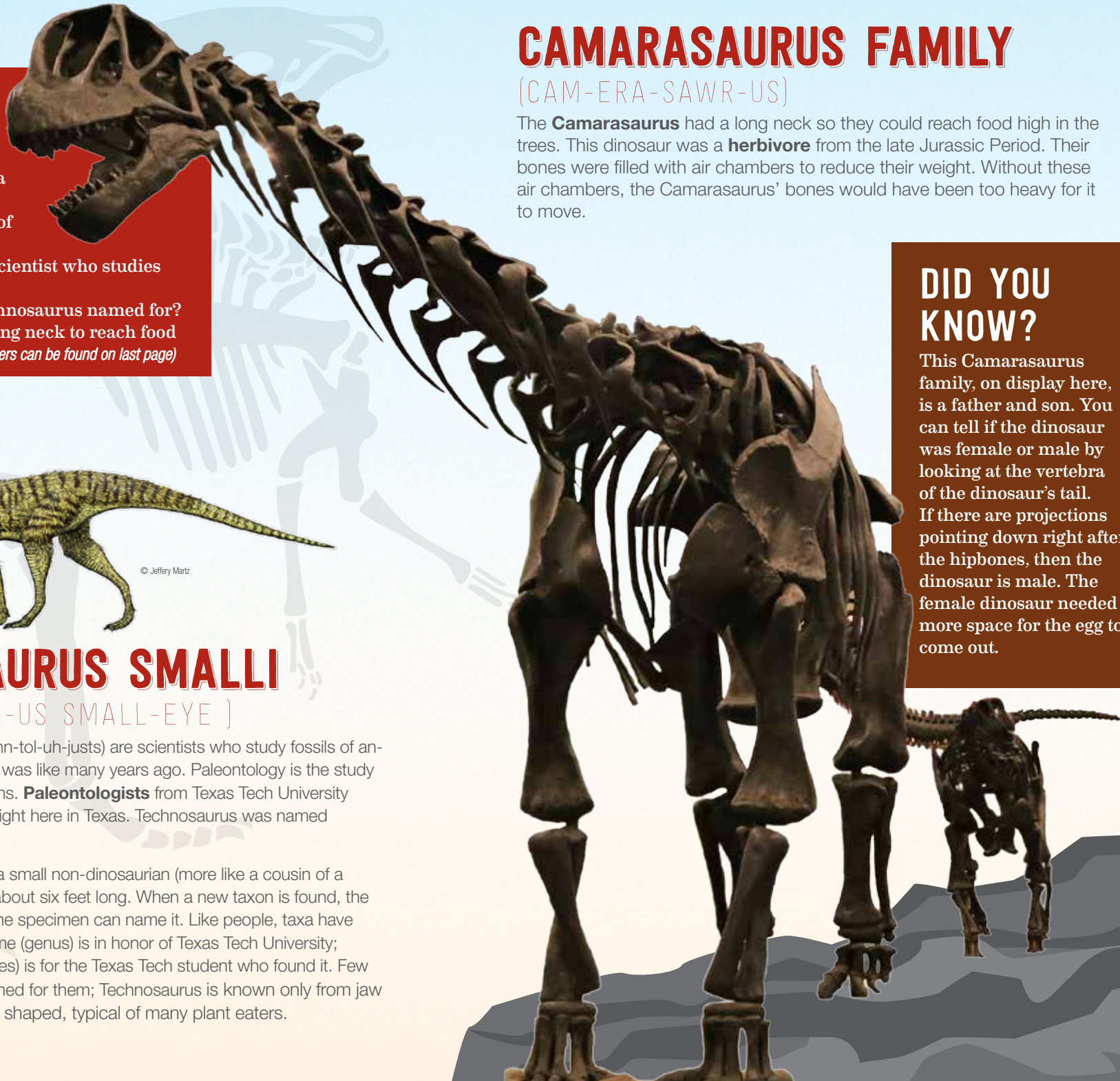
CAMARASAURUS FAMILY
(CAM-ERA-SAWR-US)

The **Camarasaurus** had a long neck so they could reach food high in the trees. This dinosaur was a **herbivore** from the late Jurassic Period. Their bones were filled with air chambers to reduce their weight. Without these air chambers, the Camarasaurus' bones would have been too heavy for it to move.

DID YOU KNOW?

This Camarasaurus family, on display here, is a father and son. You can tell if the dinosaur was female or male by looking at the vertebra of the dinosaur's tail. If there are projections pointing down right after the hipbones, then the dinosaur is male. The female dinosaur needed more space for the egg to come out.

THE CLIMB TO FIGHT

BIRDS OF A FEATHER

There are several similarities between **theropods** (meat-eating dinosaurs) and birds. Birds living today descended from small feathered, meat-eating dinosaurs. Not all dinosaurs died out; birds are living dinosaurs.

The **Archaeopteryx** (ARK-EE-OP-TER-IX) is considered to be one of the first birds. It is from the late Jurassic period. It also shows paleontologists the connection between birds and theropod (meat-eating) dinosaurs. It had feathers but was probably not a strong flier.
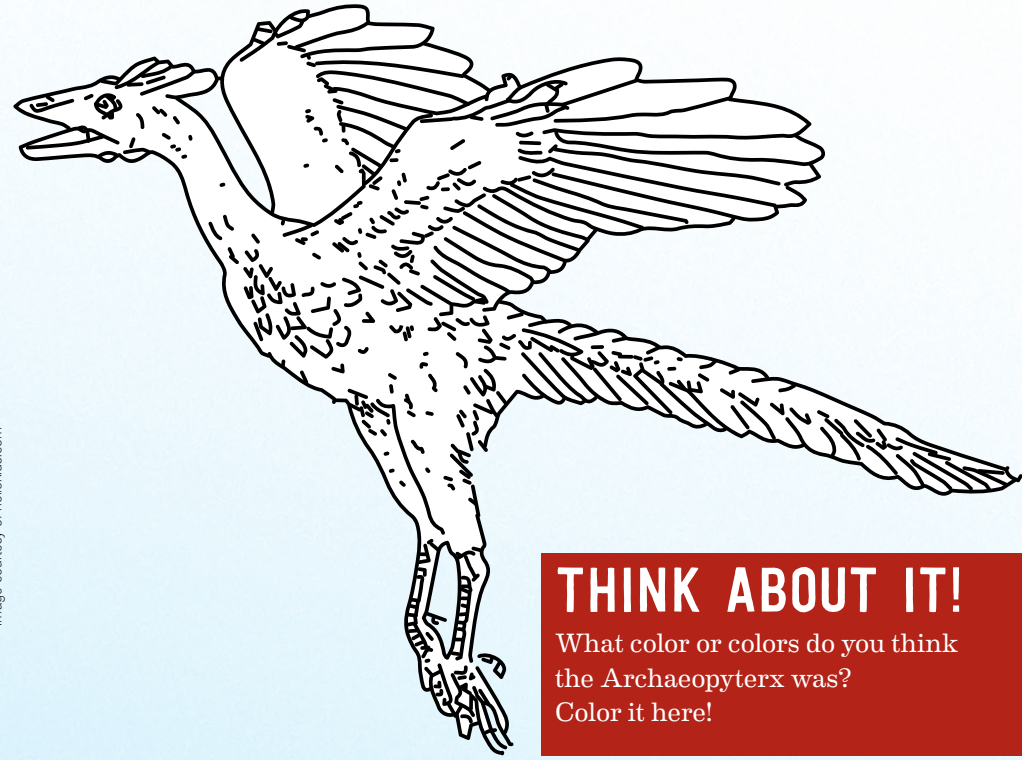
Image courtesy of hellokids.com

THINK ABOUT IT!

What color or colors do you think the Archaeopyterx was? Color it here!

DINOSAUR FOOTPRINTS

These footprints are called fossils. A fossil is the remains or evidence of any living thing that once lived on the earth.

What do you think scientists learn from looking at fossils?

TROPICAL FOREST IN WEST TEXAS?

Climate and environment have changed throughout geologic history. Today West Texas is a hot and arid country, but 225 million years ago, it was a tropical forest with flowing rivers and lakes. In this environment the top predator was **Postosuchus** (named after the town Post in Garza County, where it was found). Although Postosuchus looked like a meat-eating dinosaur, its true family tie was with Crocodiles.

QUETZALCOATLUS
(KET-ZAL-CO-WAT-LUS)

Quetzalcoatlus northropi (KET-ZAL-CO-WAT-LUS NORTH-ROPE-EYE) was neither a dinosaur nor a bird. It was a **pterosaur** which was a flying reptile that lived during the Age of Dinosaurs. This is the largest flying animal ever known. It was found right here in Texas in Big Bend National Park!

Even though this flying reptile was very large, it did not weigh a lot. It probably weighed about 140 pounds. The bones were very thin and hollow. This allowed the animal to soar in the air. It could soar at a crusing speed of 36 miles per hour.

The Quetzalcoatlus wingspan was 40 feet! That is larger than an F-16 fighter jet. The wingspan of an F-16 is 32 feet.
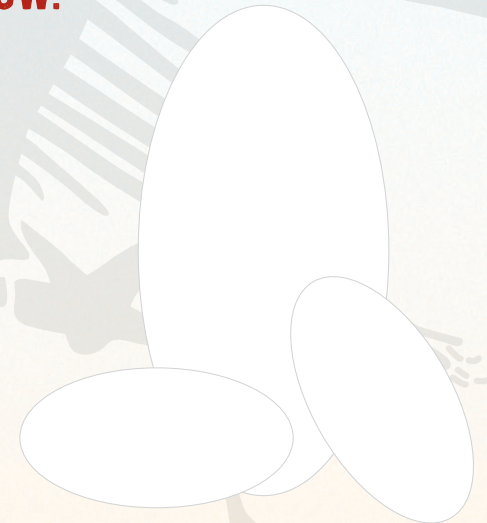
DINOSAUR EGGS

Dinosaurs laid eggs similar to birds. They could lay eggs on land and did not have to return to water like amphibians. Paleontologists do not know the color of dinosaurs or dinosaur eggs.

WHAT COLOR DO YOU THINK THEY WERE? COLOR THE EGGS BELOW.

Sauropod Eggs- Spherical Plant-eating dinosaurs that walked on four legs

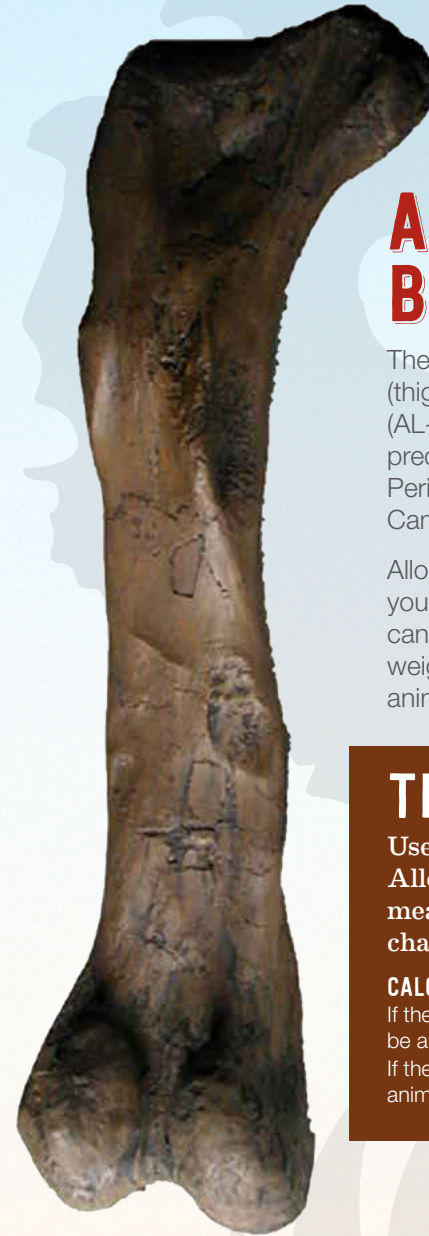**Theropod** Eggs-Elongated Meat-eating dinosaurs that walked on two legs

A PREDATOR-PREY RELATIONSHIP

The scene in front of you depicts a **Deinonychus antirrhopus** (DYE-NON-EE-KUSS AN-TEE-ROPE-US) about to attack a **Tenontosaurus tilletti** (TE-NON-TOE-SAWR-US TILL-LET-EYE).

The **predator,** Deinonychus, preyed on herbivore dinosaurs. Its nickname is "Terrible Claw" because of the large sharp claws on its powerful hind legs. These claws probably delivered fatal, slashing kicks. The **herbivore** shown here, Tenontosaurus, is the **prey** in the scene. He is the prey because he did not have sharp claws or armor to defend himself.

IN THE SPACE BELOW DRAW A PREDATOR ATTACKING ITS PREY.

ALLOSAURUS BONES

The bones on the panel are the **femurs** (thighbones) of **Allosaurus fragilis** (AL-LOW-SAWR-US FRA-GEE-LIS), a predator that lived during the late Jurassic Period that preyed upon creatures like the Camarasaurus behind you.

Allosaurus grew from baby to adult, just like you. By looking at a femur, paleontologists can determine an Allosaurus' height and weight because this bone supported the animal's entire weight.

TRY IT!

Use the ruler to help you estimate the Allosaurus' height and weight over time; measure each bone and then look at the charts on the panel.

CALCULATION:
If the thighbone is 10 inches long, the animal would be about 10 feet long.
If the thighbone is 20 inches long, the weight of the animal would be 500 pounds.

CHECK IT OUT!

These books and websites provide more information about dinosaurs and paleontologists.

BOOKS

- *National Geographic Dinosaurs*
  by Paul Barrett
- *Boy, Were We Wrong About Dinosaurs!*
  by Kathleen Kudlinski
- *Encyclopedia Prehistorica Dinosaurs*
  by Robert Sabuda & Matthew Reinhart
- *The Practical Paleontologist*
  by Steve Parker

WEBSITES

www.kidsdinos.com

www.abc.net.au/dinosaurs

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