This activity is designed to engage all ages of Zoo visitors. Your duty as an excellent educator and interpreter is to adjust your approach to fit each group you interact with. Be aware that all groups are on some kind of a time limit. There are no set time requirements for this interaction. Read their behavior and end the interaction when they seem ready to move on.

**Theme:** Reptiles are a very diverse class of animals and are important to the ecosystem as both predators and prey.

**Summary:** Educators will lead observation and discussion about the different types (orders) of reptiles and what they have in common and also what makes them different from each other. Discussion can lead to dispelling prejudices and fears of reptiles and understanding the positive impact they have on their environment.

**Objectives:**

During and after the encounter, guests will:

- Understand that there are different **groups (orders) of reptiles that share common characteristics.**
- Understand that each of the **groups (orders) of reptiles is also different** from each other through different characteristics.
- Participate in a discussion about why **reptiles are important** to the health of their ecosystem.

**Location:** Path on the east side of the reptile house

**Materials:** Zone cart, snake skin shed (will need to be replaced due to wear and tear), laminated snake skeleton, lizard skeleton, box turtle shell, field guide to the reptiles of Ohio

**Contents:**

**Part 1: Breaking the Ice**
- Doing the Activity

**Part 2: Background Information:**
- Characteristics of Modern Reptiles
- Reptile Classification
Descriptions of the Orders of Reptiles

Part 1:  
Breaking the Ice:
Volunteer A should mingle with guests as they walk the path on the east side of the Reptile House. Engage them with an icebreaker by answering their questions, adding something to their observations, or introducing yourself as a volunteer and striking up a conversation about their experience at the Cincinnati Zoo. Volunteer B can do the same thing at the cart as guests approach. Ask them if they’d like to learn more about how amazing these animals are and the impact they have on their ecosystem!

Doing the Activity:
Depending on how your initial conversation starts, there are a variety of ways to have an engaging discussion about reptiles. Go with the flow of what the guests are interested in while still focusing on the theme.

1. When mingling with the guests, ask them what are some of the different types of animals they think are reptiles.

Example #1: I am most familiar with snakes could lead to a discussion of describing other orders of reptiles such as lizards.
- Snakes and lizards are in the same group or order but their some differences. Using the mind map and other props compare and contrast the two.
- Use the acrylic skeletons to compare and contrast their anatomy.

Example #2: I am most familiar with snakes could lead to a discussion of describing other orders of reptiles such as lizards, alligators and their relatives and turtles.
- Continue the comparative anatomy discussion to lead to turtles and tortoises
- What might be the difference between tortoises and turtles, use the mind map and supporting material to show them?

*When leading a discussion, you want to encourage the guests to critically think, make educated guesses, and discover information with your guidance. Ask them guiding questions or create a scenario for them to think about and discuss. The information and message will more likely stick if they participate in their learning experience, not just receive a brain dump of information.*

What kinds of reptiles are there, similarities and differences (objective)

1. Encourage the guests to make some other observations about the reptile materials/biofacts that you have to show them and discuss why all reptiles are related to each other through common characteristics such as having scales. Follow the discussion by showing them some of these common features.

2. Show them the various biofacts while referring to the flat art to emphasize what “order” the biofacts represents...for example: the shell is found on turtles, the snake skin shed from snakes and on through the biofacts, let the guest lead the discussion while you guide it

NOTE: See Background Information below for information about the various orders of reptile’s characteristics
Why do we fear reptiles and why are they important to the ecosystem? (objective)

3. Use the zone materials to support and provide a context for your discussion. At this point the conversation may have turned to why reptiles are often disliked and feared.

4. Try to guide the discussion to why reptiles are important to the health of their ecosystem.

What are the ecological roles of reptiles?

- Reptiles are important components of the food webs in most ecosystems. They fill a critical role both as predator and prey species.

- Herbivorous species (plant eating) can be important seed dispersers, particularly on island habitats. They are also known to act as pollinators.

- Removal of any species from its ecosystem can drastically alter the populations of other organisms, but those that have a particularly influential role within an ecosystem are known as keystone species. Top predators, such as the crocodile, are often keystone species, though they also contribute to the food chain as prey while they are still young. Some species are considered critical for the way they modify their habitat. American alligators living in the everglades dig “gator holes”, which are often the only aquatic habitat left during the dry season, providing important refuge for many species of fish, turtles, and other aquatic species, as well as a source of water for birds, terrestrial animals and plants.

- Reptile species can also have a useful anthropogenic role in ecosystems. In some areas, they help control the numbers of serious agricultural pests by consuming rodent and insect pests.

The Biofacts

1. Snake skeleton - shows the unique skeleton of the legless snake
2. Lizard skeleton - Can be exhibited in comparison to the snake skeleton because lizards have limbs.
3. Box turtle shell
4. Snake skin
5. Alligator skull
6. Field guide to the reptiles of Ohio
7. Flat art showing the relationships between orders of reptiles

Part 2: Background Information:

Characteristics of Modern Reptiles

1. A variety of body shapes that are covered with scales and plates for protection against desiccation and injury.
2. Most have paired limbs with five toes except snakes.
3. Skeleton is well ossified and well developed.
4. Respiration with lungs, reptiles do not have gills like the larval stage of amphibians.
5. 3 chambered heart, a four chambered heart in crocodilians
6. Efficient water conservation organs and behaviors. An example of well-developed organs include paired kidneys and salt glands.
7. Sexes separate with internal fertilization.
8. They can give live birth or lay eggs. Reptile eggs have a harder shell that can be buried on land and it won’t dry out, similar to the egg of a bird.
9. All reptiles are ectothermic.

**Reptile Classification**

Class Reptilia

Order of reptiles:
1. Snakes and lizards
2. Turtles and tortoises
3. Crocodiles, alligators and relatives
4. Tuatara

**Descriptions of the Orders of Reptiles**

**Order: Snakes and Lizards** … (Snakes and lizards are in the same order)

Snakes are abundant and diverse reptiles that are all limbless and predatory.
- No legs….No external ears….No eyelids
- The snakes have two specializations that characterize them…An extreme elongation of a legless body and the ability to eat large prey.
- Lengthened by extra vertebrae
- Internal organs are modified to allow for such a narrow body plan
- Rapid locomotion with three types of crawling, rectilinear, undulation or side winding
- Flicking their forked tongue collects chemical molecules that are brought into the mouth and are inserted into the Jacobson’s organ on the roof of the mouth. This organ analyzes the chemical signals.

Lizards have radiated into a wide variety of habitats and display an array of behavioral, morphological and physiological adaptations.
- Keen eyesight adapts them for diurnal activity (daytime) and many species attract a mate through head bobbing behaviors.
- Water conserving organs make water use very efficient so lizards can inhabit deserts
- Most with legs, some without such as the legless lizards.

*Green tree snake (yellow morph)*

*Blue-tongued skink*
Several venomous species including the Gila monster which is on display in our Reptile House.
Moving in and out of the sun allows is called **behavioral thermoregulation**, This allows the animals to maintain a very steady body temperature.

**Order: Turtles and Tortoises**
- Their unique shell appeared very early. The top is called the **carapace** and the bottom is the **plastron**.
- The **shell protects** the animal from potential predators but it also helps the turtle buffer tough environmental conditions
- Lacking teeth, a pronounced **keratin**-made beak is adapted to tear and hold food.
- Turtle and tortoise species have a **varied diet**
  - Omnivorous (eats meat and plants)….many **woodland species** such as the box turtle
  - Herbivorous…(eats plants and fruit) many **tortoise** species
  - Carnivorous…many aquatic species such as **sea turtles and water turtles**
- **Limbs** are modified to suit the habitat and behavior of species.
- Aquatic animals **flattened paddle-like feet** for swimming.
- Land dwelling turtles often have **elephantine feet** for walking on substrate.

**Box turtle**

**Order: Crocodiles, alligators and relatives**
- Complete separation of arterial and venous blood
- True cerebral cortex
- “Third” eyelid as in birds
- Position of nostrils and ears that close when submerged
- Large compressed tail for swimming
- Modified appendages
- Complex behaviors such as parental care and communication

**American alligator**
Order: Tuatara

- The tuatara is a living fossil, having many primitive features similar to fossils over 200 million years old!
- Some of these features are:
  - A primitive skull
  - A “third eye” or parietal eye which is on the top of the skull, complete with lens, cornea and nerves to the brain.
  - These animals are only found on a handful of islands north of New Zealand.

Zone Set-up: Assign one person as Volunteer A and one person as Volunteer B. Feel free to switch roles as often as you both like throughout your shift. Volunteer A should be positioned farther away from the cart to engage visitors in conversation closer to the exhibit and can direct them towards Volunteer B. Volunteer B will be stationed at the cart with the activity materials. Make sure you count guest attendance if during your shift.

Ending the Activity:
Find out if there is any more information they’d like to know about our exhibit and encourage them to visit the Reptile House. Make sure to remind guests about other cool places to visit or things to see while they are here! Find out what the guest is interested in and make an appropriate suggestion. Make sure to thank them for stopping by!

Zone Clean-up:
Put all Biofacts and all other materials inside the cart. Record your attendance on the attendance sheet and make a note if any materials are missing. Please report any cart issues on the clipboard in the volunteer room.
Notes on the “Reptile House”

Today’s “Reptile House” was originally the “Monkey House” was designed by renowned architect James W. McLaughlin who designed all of the new buildings in 1875. McLaughlin was then one of the area’s leading architects and is still considered one of the Cincinnati areas most outstanding. He also designed the Art Museum and Art Academy, a number of downtown buildings as well as projects for the Zoo for zoo founder Andrew Erckenbrecher.

The then Monkey House was described as being of “Turkish” style while the airy interior was encircled by elegant Corinthian columns. The Reptile House is now the oldest Zoo building in America. It the Passenger Pigeon Memorial and the later Elephant House are listed on the National Register of Historic places and were important in the Cincinnati Zoo’s designation in 1987 as a National landmark.


The then Monkey House in circa 1930