In partnership with the 2026 Chevron Community Day

Introduction

Purpose:
This toolkit helps students understand that reptiles are our neighbors in New Mexico's ecosystems. Far from being rare or dangerous, reptiles play essential roles in local food webs; such as predators of insects and rodents, prey for other wildlife, and indicators of healthy habitats. By learning about native reptiles, students build awareness of how everyday actions can impact local ecosystems.

Audience & Setting:
Designed for K–12 educators, this toolkit is adaptable for use in:

- Classroom lessons
- Schoolyard or campus investigations
- Outdoor learning spaces and field experiences

Activities can be scaled for different grade levels and learning environments.

Big Ideas:

- Biodiversity: New Mexico's diverse landscapes support a wide variety of reptile species
- Adaptation: Reptiles exhibit unique structural, behavioral, and physiological adaptations that help them survive in arid and semi-arid environments
- Habitat Stewardship: Healthy reptile populations reflect healthy ecosystems
- Human–Animal Coexistence: Understanding reptiles helps reduce fear and encourages respectful coexistence with local wildlife

Reptiles in New Mexico

New Mexico is home to more than 100 species of reptiles. These species fall into three main groups: snakes, lizards, and turtles.

Snakes:
New Mexico has a high diversity of snakes, including gopher snakes, kingsnakes, garter snakes, coachwhips, and several species of rattlesnakes. Most native snakes are nonvenomous. Snakes play an important role by controlling rodent populations, which helps limit crop damage and the spread of disease.

Lizards:
Lizards are the most commonly seen reptiles in New Mexico. Species such as whiptail lizards, collared lizards, horned lizards, skinks, and geckos are found across the state. Many lizards feed on insects and spiders, helping reduce pest populations. Some species, like horned lizards, specialize in eating ants.

Turtles:
New Mexico's turtles include box turtles, painted turtles, softshell turtles, and snapping turtles. Most turtles are associated with rivers, ponds, wetlands, and riparian areas. They help keep semi-aquatic systems balanced by feeding on insects, plants, and dead organic material.

Ecosystem Connections:
Reptiles contribute to ecosystem health in several ways:

- Pest control: By eating insects and rodents, reptiles help regulate populations that can become problematic for humans and agriculture.
- Food webs: Reptiles serve as prey for birds of prey, mammals, and other predators.
- Soil and plant interactions: Burrowing species help loosen soil, and reptiles influence plant communities through seed movement, nutrient cycling, and grazing on vegetation.

*Full New Mexico reptile species appendix at the end of this toolkit





- *New Mexico whiptail*
- *Regal horned lizard*
- *Sonoran coral snake*
- *Western diamondback rattlesnake*
- *Rio Grande cooter*

Understanding Reptile Habitats

What Makes a Good Habitat:

Reptiles depend on a mix of environmental conditions rather than a single feature. A good reptile habitat usually includes:

- Sun and shade: Reptiles need sunny areas to warm their bodies and shaded areas to cool down. Rocks, logs, and pavement edges are often used for basking.
- Shelter: Crevices, burrows, leaf litter, dense plants, and fallen wood provide protection from predators and extreme temperatures.
- Food sources: Insects, rodents, amphibians, plants, and other prey must be present in sufficient numbers.
- Water: Some reptiles live near permanent water, while others rely on seasonal rain, puddles, or moisture in soil and plants.
- Microhabitats: Small-scale features such as rock piles, ant mounds, grasses, and soil type can be just as important as the larger landscape.

Threats and Conservation:

Reptile habitats in New Mexico are affected by:

- Habitat loss: Development, agriculture, and road construction remove or alter natural areas.
- Fragmentation: Roads, fences, and buildings break habitats into smaller pieces, making it harder for reptiles to find food, mates, and shelter.
- Urban impacts: Pesticide use, invasive plants, increased traffic, and people moving rocks or collecting animals can reduce reptile populations.

Protecting connected, undisturbed habitat helps support reptile survival and overall ecosystem health.

Habitat Mapping Activity

Students explore a schoolyard, park, or outdoor site and create a simple habitat map.

1. Students observe and mark sunny areas, shaded areas, shelter spots, and potential food sources.

2. They note human features such as sidewalks, buildings, or roads.

3. Students predict which reptiles might use each area and explain why.

4. As an extension, students identify changes that could improve habitat quality (adding native plants, leaving leaf litter, protecting rock piles).

- New Mexico Bosque, a riparian ecosystem

Creating a Reptile Refuge

This activity is adapted from the The Houston Arboretum and Nature Center DIY Toad Abode project and focuses on building small refuges that meet basic reptile needs. The goal is not to attract or handle animals, but to create safe shelter that mimics natural conditions. This project allows students to apply habitat and adaptation concepts through hands-on construction while supporting reptiles, amphibians, and other small wildlife.

Principles:

- Mimic natural shelter found in local habitats
- Create areas with shade and moisture
- Use native or natural materials whenever possible

Materials and Steps:

1. Use clay pots or broken pottery to create small hideouts.

2. Place pots on their sides or partially bury them in shady, cooler areas of a garden or outdoor space.

3. Add rocks, logs, and mulch around the refuge to provide cover and allow for temperature differences between sun and shade.

4. Place a shallow water source nearby, such as a plant saucer filled with water and small stones to prevent drowning.

Learning Extensions:

- Students keep observation journals to record animal signs, weather conditions, and changes over time.

- Compare refuge use during different seasons or temperature conditions.

- Discuss which design features seem most effective and why.

Using the ABQ BioPark as an Extension of the Classroom

This section provides ways teachers can use the ABQ BioPark to support classroom learning, with a focus on reptiles and related life science concepts.

A. Field Trips and On-Ground Experiences:

The ABQ BioPark offers staff-led educational programs for school groups. These programs are designed to be adapted for all ages of students. Experiences may take place indoors or outdoors and include hands-on learning components.

Planning ahead is important. Teachers should submit a field trip request and coordinate logistics a minimum of two weeks in advance. Planning for pre-visit lessons and post-visit reflection activities helps students connect the experience to classroom learning goals.

B. Ties to Standards and Classroom Activities

These paid programs at the BioPark utilize educational materials that align with NGSS learning goals, for example:

3-LS4-2
Use evidence to construct an explanation for how the variations in traits among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

- Students use observational evidence from biofacts and live animals to explain how traits support survival.
- Discussion highlights how adaptations increase access to food, water, shelter, and safety.
- Students compare traits within and across species when prompted (e.g., different beak shapes, fur density).

Following these standards help students prepare for what they will see. Such as adaptations, habitat needs, and species diversity. They also provide structure for reflection after the visit. If you would like to know more about what standards our programs alight with, please contact Chazz Peterson, Outreach Education Coordinator at charlespeterson@cabq.gov.

C. Enhancing the Visit with Inquiry Challenges

Teachers can frame the visit around guiding questions, such as:

- How do reptiles regulate their body temperature?
- What adaptations are common in desert reptiles compared to aquatic reptiles?
- What roles do reptiles play in their ecosystems?

During the visit, observations can be supported through:

- Simple teacher made bingo cards, scavenger hunts (see appendix), or photo challenges focused on visible traits or behaviors
- Discussion prompts that connect schoolyard habitat projects (such as refuge building) to how BioPark staff design reptile exhibits to meet animal needs

D. Special Programs & Tours:

The BioPark Society offers Reptile Tours for purchase as well, which provide behind-the-scenes experiences with animal care staff. These tours may include close observation of reptiles and discussions about animal care, habitat design, and conservation work.

These experiences are especially well suited for older students, enrichment groups, or classes with a strong interest in biology or environmental science.

E. Outreach and Virtual Options:

When an in-person visit is not possible, the BioPark offers outreach programs that bring animal education into schools, as well as virtual field trips. These options still emphasize interaction, observation, and inquiry and can support the same learning goals as an on-site visit.

Classroom Lessons & Activities

This section includes classroom activities that build on local reptiles and BioPark experiences while reinforcing life science concepts.

Species Profiles:
Students research a reptile species found at the ABQ BioPark or in native New Mexico habitats (full list of NM species provided in the appendix). Each profile should include habitat, diet, adaptations, and conservation status. Students can present their findings through short presentations, posters, or one-page fact sheets.

Adaptation Stations:
Set up stations that focus on different environments, such as desert and aquatic habitats. At each station, students examine reptile traits, including: body shape, skin texture, coloration, behavior, and temperature regulation. They then connect those traits to environmental needs. Students compare how adaptations differ depending on habitat.

Ecosystem Webs:
Students create food webs that include reptiles as predators, prey, or both. Using native species, students identify energy sources, trophic levels, and how changes to one species or habitat could affect the entire system. This activity reinforces the role of reptiles in maintaining ecosystem balance.

Community Engagement & Stewardship

This section encourages students to extend their learning beyond the classroom and share it with their school and local community.

Sharing Learning:
Students create posters, displays, or short presentations that highlight local reptiles, their habitats, and why they matter. These can be shared in hallways, libraries, school events, or family nights to help spread accurate information and reduce fear or misconceptions about reptiles.

Community Connections:
Teachers can partner with local conservation organizations, nature centers, or the ABQ BioPark to reinforce learning. Sharing BioPark-based experiences with families through newsletters, photos, or student reflections helps connect classroom learning to the wider community.

Coexistence and Stewardship:
Students learn and promote basic coexistence principles:

- Respect wildlife and leave animals where they are found
- Observe reptiles without handling or disturbing them
- Protect habitat by staying on trails, avoiding pesticide use, and keeping outdoor spaces natural

These actions help students see themselves as responsible community members who can support wildlife and healthy ecosystems.

Safety, Ethics & Respect for Wildlife

Safety and respect are essential when learning about reptiles. Students should understand that wild reptiles should never be handled unless trained professionals are present. Handling wildlife can cause stress or injury to the animal and can be unsafe for people.

BioPark visits provide an opportunity to model ethical wildlife viewing. Students observe animals from appropriate distances, follow staff instructions, and learn how professional care supports animal well-being. AZA accredited zoos, like the BioPark, also play an important role in conservation, including habitat protection, research, and public education.

By learning safe and respectful practices, students develop an understanding of how people can appreciate wildlife while minimizing harm.

Wildlife Encounters:

New Mexico is home to a few venomous reptiles. Understanding which species are venomous, and how to respond calmly and safely, helps reduce fear and prevent injury.

Examples of Venomous Reptiles in New Mexico:

- Rattlesnakes (several species statewide): Found in deserts, grasslands, forests, and rocky areas. Most bites occur when snakes are surprised, threatened, or handled.
- Sonoran Coral Snake: Rare and secretive, found mainly in southern New Mexico.
- Gila Monster: A venomous lizard found in southwestern New Mexico. Slow-moving and generally non-aggressive, but should never be approached or handled.

General Safety Guidelines:

- Never attempt to touch, move, or harass a reptile.
- Give the animal plenty of space and allow it to move away on its own.
- Watch where you step or place your hands, especially around rocks, logs, and tall grass.
- Stay on established trails when hiking or exploring outdoors.

If You Encounter a Venomous Reptile:

- Stay calm and stop moving.
- Slowly back away, keeping a safe distance (at least several feet).
- Do not run, throw objects, or attempt to kill the animal.
- Alert others nearby so they can avoid the area.

If You Encounter Any Wild Reptile:

- Observe quietly from a distance.
- Do not pick it up, poke it, or try to relocate it.
- Leave rocks, logs, and shelter items as you find them.

In Case of a Bite:

- Seek medical help immediately.
- Keep the person calm and still.
- Do not attempt home remedies, tourniquets, or suction.

Teaching students clear, calm protocols helps them understand that reptiles are not something to fear, but something to respect. These practices protect both people and wildlife and support safe coexistence in New Mexico's shared landscapes.

Resources & Next Steps

This section helps teachers continue learning and apply concepts beyond a single lesson or visit.

BioPark Education Resources:
Teachers are welcome to contact the ABQ BioPark education team for further teacher resources, including scavenger hunts, worksheets, and program information that support life science learning and field trip experiences.

Classroom Materials:
This toolkit can be used alongside:

- Student worksheets focused on observation, comparison, and reflection
- Reflection or nature journals for recording learning (with or without BioPark visits)
- A habitat project template to guide schoolyard or garden-based conservation activities
- San Diego Zoo also has a website filled with free educational materials, linked here: https://sandiegozoowildlifealliance.org/educational-resources

These materials support inquiry, documentation, and student voice across grade levels.

Next Steps for Teachers:

- Connect lessons to local habitats students encounter in their own neighborhoods
- Revisit reptile concepts seasonally to observe changes in behavior and habitat use
- Encourage students to share learning with families and community members
- Explore additional conservation or citizen science opportunities related to reptiles and habitat protection

Together, these resources and next steps help teachers extend reptile learning beyond the classroom and support ongoing stewardship in New Mexico.

Reptiles of New Mexico Species List

Snakes:

- Glossy snake
- Trans-Pecos rat snake
- Sonoran whipsnake
- Racer
- Coachwhip
- Striped whipsnake
- Ringneck
- Chihuahuan hook-nosed snake
- Mexican hog-nosed snake
- Plains hog-nosed snake
- Eastern hog-nosed snake
- Desert night snake
- Chihuahuan night snake
- Gray-Banded kingsnake
- California kingsnake
- Desert kingsnake
- Madrean mountain kingsnake
- Sonoran mountain kingsnake
- Milksnake
- Plain-bellied water snake
- Smooth green snake
- Great Plains rat snake
- Gopher snake
- Western long-nosed snake
- Eastern patchnose snake
- Western patchnose snake
- Green rat snake
- Western ground snake
- Smith's black-headed snake
- Plains black-headed snake
- Chihuahuan black-headed snake
- Yaqui black-headed snake
- Blackneck garter snake
- Terrestrial garter snake
- Mexican garter snake
- Checkered garter snake
- Western ribbon snake
- Plains garter snake
- Narrow-headed garter snake

- Common garter snake
- Sonoran lyre snake
- Chihuahuan lyre snake
- Lined snake
- Rattlesnakes
- Western diamondback rattlesnake
- Arizona black rattlesnake
- Rock rattlesnake
- Western black-tailed rattlesnake
- Eastern black-tailed rattlesnake
- Mojave rattlesnake
- Tiger rattlesnake
- Prairie rattlesnake
- Ridge-nosed rattlesnake
- Western massasauga
- Sonoran coral snake
- New Mexico blind snake
- Western blind snake

Lizards:

- Madrean alligator lizard
- Eastern collared lizard
- Long-nosed leopard lizard
- Texas banded gecko
- Western banded gecko
- Mediterranean house gecko
- Gila monster
- Zebra-tailed lizard
- Greater earless lizard
- Elegant earless lizard
- Common lesser earless lizard
- Texas horned lizard
- Greater short-horned lizard
- Roundtail horned lizard
- Desert short-horned lizard
- Regal horned lizard
- Dunes sagebrush lizard
- Twin-spotted spiny lizard
- Clark's spiny lizard
- Prairie lizard
- Southwestern fence lizard
- Sagebrush lizard
- Yarrow's spiny lizard
- Desert spiny sizard

- Crevice spiny lizard
- Slevin's bunchgrass lizard
- Plateau fence lizard
- Striped plateau lizard
- Ornate tree lizard
- Common side-blotched lizard
- Mountain skink
- Many-lined skink
- Great Plains skink
- Canyon spotted whiptail
- Grey checkered whiptail
- Chihuahuan spotted whiptail
- Gila spotted whiptail
- Common spotted whiptail
- Little white whiptail
- Little striped whiptail
- Marbled whiptail
- New Mexico whiptail *(New Mexico State Reptile)*
- Six-lined racerunner
- Sonoran spotted whiptail
- Common checkered whiptail
- Tiger whiptail
- Desert grassland whiptail
- Plateau striped whiptail

Turtles:

- Common snapping turtle
- Painted turtle
- Rio Grande cooter
- Ornate box turtle
- Big bend slider
- Pond slider
- Mud & musk turtles
- Yellow mud turtle
- Sonoran mud turtle
- Smooth softshell
- Spiny softshell

Kindergarten - 2nd Grade

1. Name 2 species of rattlesnake in the Reptile building:

2. What reptile is known as a monster?

3. How many legs do snakes have?

4. How many legs do lizards have?

5. Find a reptile with a shell.

6. What animal looks like a worm but is actually a reptile?

7. The tuatara has a special “third eye.” Where is it located?

8. What does the king cobra spread out when it feels scared?

9. The chuckwalla puffs up with air. What fruit is painted behind it?

10. Find a reptile that uses its colors to blend in.

11. Can the quince monitor swim, fly, or climb?

12. Find a snake that has three colors.

13. Find a reptile sitting on a branch.

14. What is your favorite reptile you've seen today?

3rd - 5th Grade

1. There are more than _____ species of snakes and lizards found worldwide.

2. Where do Komodo dragons live?

3. Tortoises live on land, but where do turtles spend most of their time?

4. Crocodiles first appeared how many million years ago?

5. Worm lizards have poor eyesight. Why do they not need to see very well?

6. Tuataras live only in what country?

7. The king cobra's venom is strong enough to kill up to how many people with one bite?

8. The female king cobra is unique. What does she do with her eggs?

9. The chuckwalla inflates its body. How does this help it hide in a crack?

10. What year was the quince monitor discovered?

11. The pit viper's skin patterns help it blend in. What is this type of protection called?

12. What are two reptiles native to New Mexico?

13. Can you find three venomous reptiles?

14. What is your favorite reptile you've seen today?

6th - 8th Grade

Find an animal that matches with a clue below. You can find animals to match every clue somewhere in the zoo. Certain reptiles may fit more than one clue, but for an extra challenge try to use each species once.

A piscivore _____

A species from Madagascar_____

An animal that is often a victim of illegal wildlife trade_____

A species with excellent camouflage _____

An herbivore_____

A species that stores fat in its tail_____

A venomous animal _____

An animal more than 50 years old (feel free to ask a staff member)_____

The largest species of snake _____

An animal threatened by habitat loss _____

A species that lives in New Mexico _____

A species you recognize from a movie _____

Your favorite kind of reptile_____

Bonus:

What is the Latin name of the Komodo dragon? _____

How many islands can Komodo dragons be found on?_____

Find three different endangered species

1._____ 2._____

3._____

9th - 12th Grade

Find an animal that matches with a clue below. You can find animals to match every clue somewhere in the zoo. Certain reptiles may fit more than one clue, but for an extra challenge try to use each species once.

A reptile you've seen in a movie (name the movie, too) _____

An animal that is often a victim of illegal wildlife trade_____

Three species of aquatic turtle 1._____ 2._____ 3._____

A venomous snake _____

A nonvenomous snake _____

The only venomous lizard _____

A reptile in the genus *Crotalus* _____

Two endangered species 1._____ 2._____

A critically endangered species_____

An animal more than 50 years old (feel free to ask a staff member_____

An animal threatened by climate change_____

Two species found in Asia 1._____ 2._____

A species you've never heard of before _____

Lizards have legs, but what makes them different from snakes?

Your favorite kind of reptile_____

Bonus: Find three reptiles from New Mexico

1._____

2._____

3._____